Issue 88
PS
1960 Series
THE PREVENTIVE MAINTENANCE MONTHLY
WOT HAPPENED TO HIM??...
LACK OF PRE-OPERATION MAINTENANCE CHECK...
PUFF
PUFF
HOW ABOUT SPRING CLEANING AND INVENTORY..?
WE'RE OVERSTOCKED ON ACORNS...AND SHORT ON WALNUTS...
SEE WHAT I MEAN ABOUT PRE-FLIGHT PM, JUNIOR.
Gil Fitzner

HEADQUARTERS
UNITED STATES CONTINENTAL ARMY COMMAND
OFFICE OF THE COMMANDING GENERAL
FORT MONROE, VIRGINIA

The Editor
PS Magazine
Raritan Arsenal
Metuchen, New Jersey

Dear Sir:

Here is a brief message I would like to pass along to the military and civilian personnel of all components of our One Army.

"A good unit moves, shoots, communicates, and maintains itself well. These are four basic fundamentals. Maintenance is listed last, not because it is less important, rather it is good maintenance that enables accomplishment of the other three. In peacetime, proper maintenance is of utmost importance, in combat it becomes a matter of life or death.

"At no time in the history of our country have these fundamentals been more manifest than today. The demands placed upon you, to properly maintain the highly complex and costly equipment of our modern Army, are far greater today than ever before.

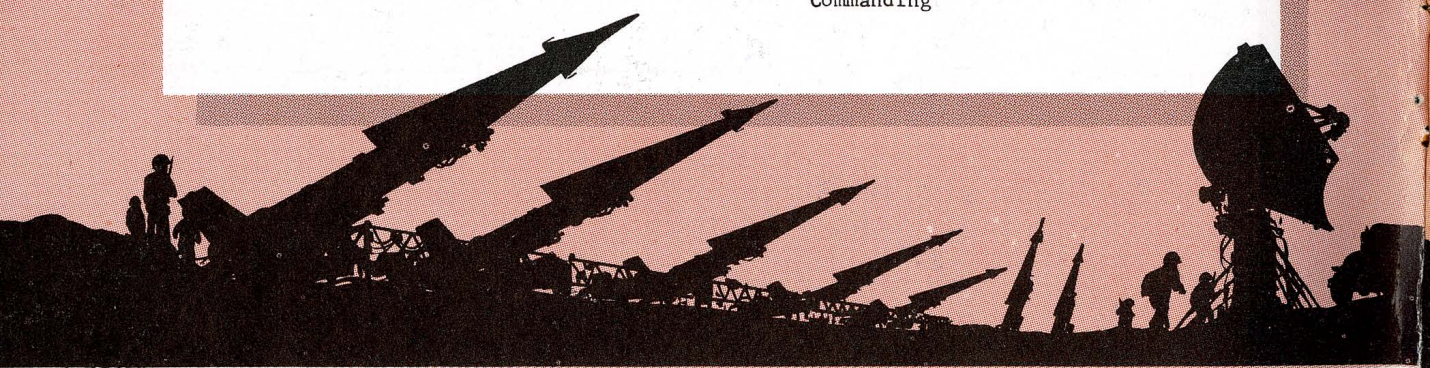
"This is why I ask that each of you, as a member of our One Army, study and understand the maintenance needs of your equipment; and discharge your individual responsibilities, whether they be command, supervisory, or personal, in support of a sound and continuous preventive maintenance program.

"In the words of PS Magazine, 'We have the world's best equipment ..... take care of it.'"

Sincerely,

Bruce C. Clarke

BRUCE C. CLARKE
General, USA
Commanding



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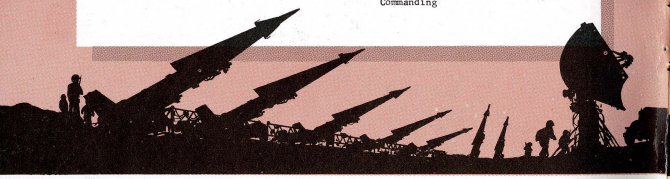

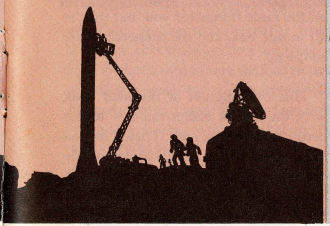

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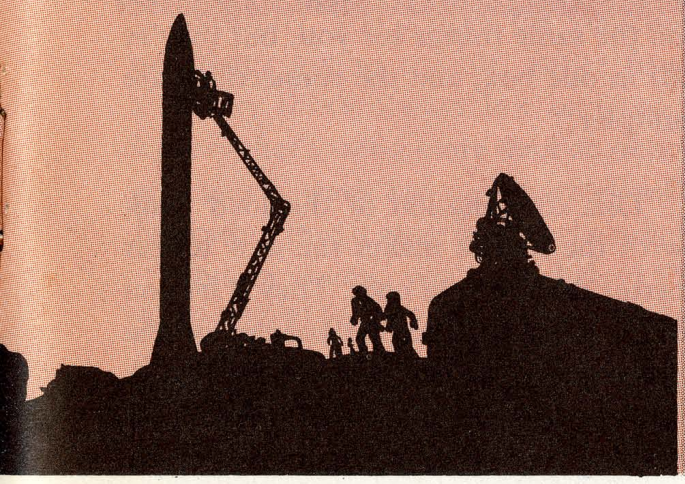

HELP WANTED:
SNAKE CHARMERS TO OPERATE THE

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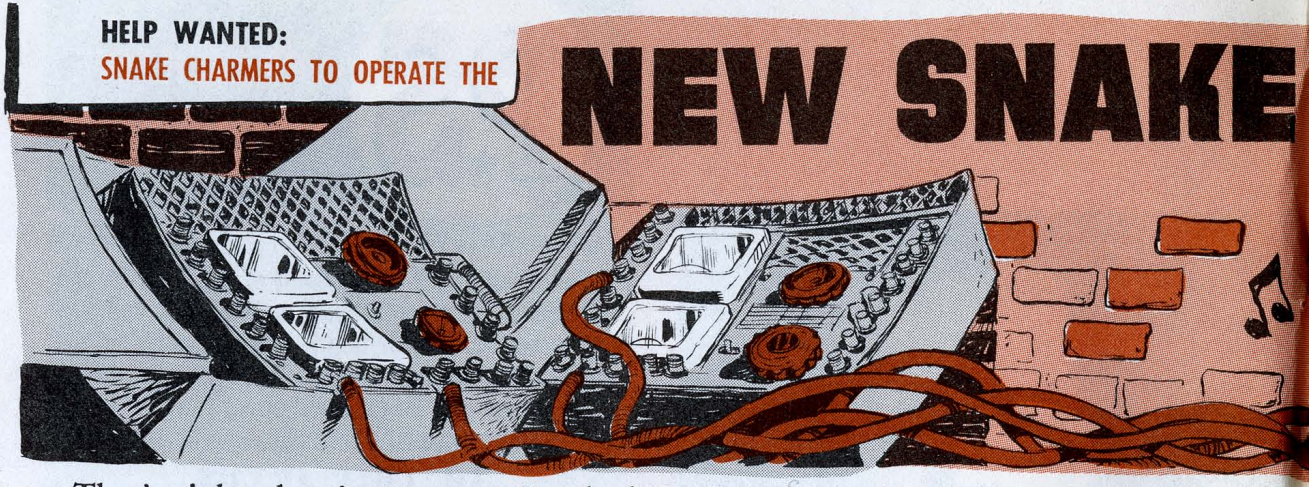
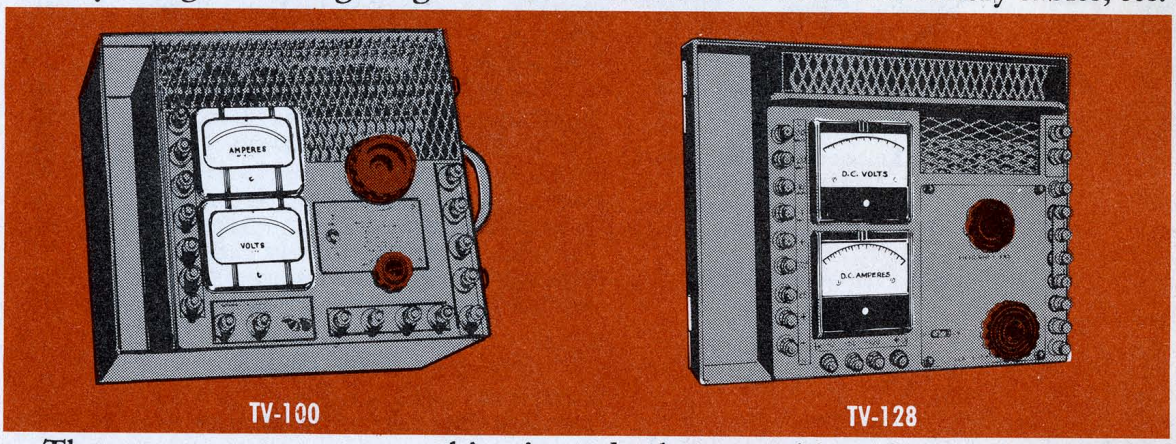


That's right, there're two new "snake-boxes" or low-voltage circuit testers in the second echelon tool kits now.

The model TV-100 and the model 128, both carried under FSN 4910-092-9136. (Your instrument may have FSN **6625**-092-9136 stamped on it.) There're different layouts and range selections used on these two instruments, but electrically they're much the same.

The new boxes have a way of loading your circuits so you can fully test your vehicle's electrical system without having to use the starter to knock down your battery charge in testing the generator's current limiter and the battery cables, etc.



TV-100 TV-128

The new testers are a combination of multiple-range voltmeters and ammeters with a variable load bank. They include a field rheostat to let you control the field current in the generators you're testing. For those of you who have used the model 129 load bank and field rheostat box in connection with the older (FSN 4910-356-8269, formerly 17-T-5575-50) low-voltage circuit tester (now superseded), the new ones do the same things for you, but they're all in one box, and the connections are simpler.

This combination of the load bank with the meters makes the new testers better than the old ones. They'll let you draw current from the battery or the generator right through the load bank and the ammeter to ground, without involving any other parts of the system.

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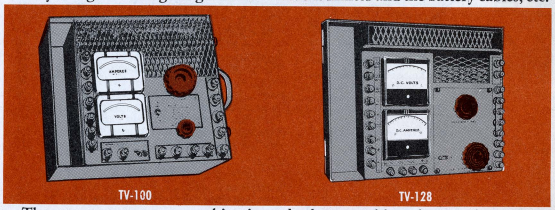

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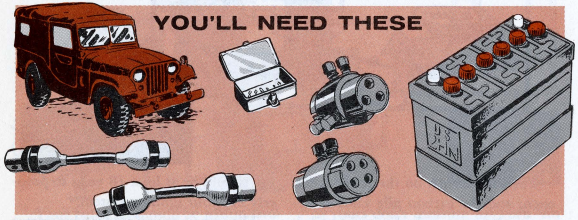
This load drawing capacity lets you make a few tests you could not make before, and it makes some of the old tests lots quicker and easier. (In this, the Model TV-100 has a slight edge on the Model 128, since the voltmeter can be switched from range to range, instead of changing leads from post to post. However, you've also gotta be more careful since you can overload that meter if you forget to switch back to the higher range.)

So let's follow through with a series of tests on the charging system of a waterproof M-series wheeled vehicle.



Naturally, you'll need the vehicle—one that's giving trouble, either from a battery that's always low or from a battery that's using more than an ounce of water a week for each battery cell, indicating that it must be overcharging.

And, or course, you'll need the FSN 4910-092-9136 tester, whichever model your shop happens to have.

You'll use the wheeled vehicle adapter set, FSN 4910-356-7511, or the new FSN 4910-348-7600 which supersedes it, and the spanner wrench, FSN 5120-288-6468, for the electrical connectors.

And you'll want your regular second echelon mechanic's tool set.

Two men can do the job in less than half the time one man can. Before you start these tests, make sure your vehicle's at normal operating temperature.

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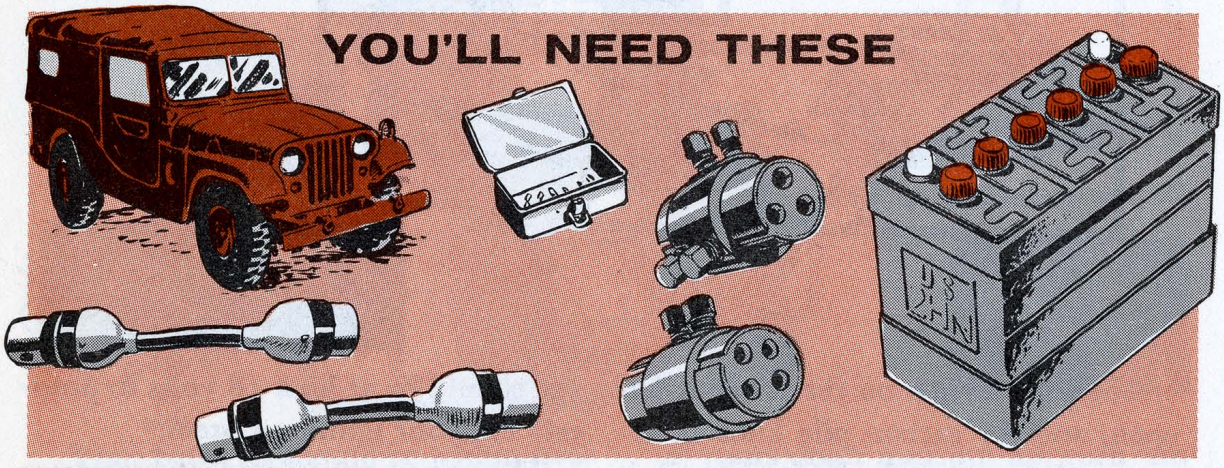

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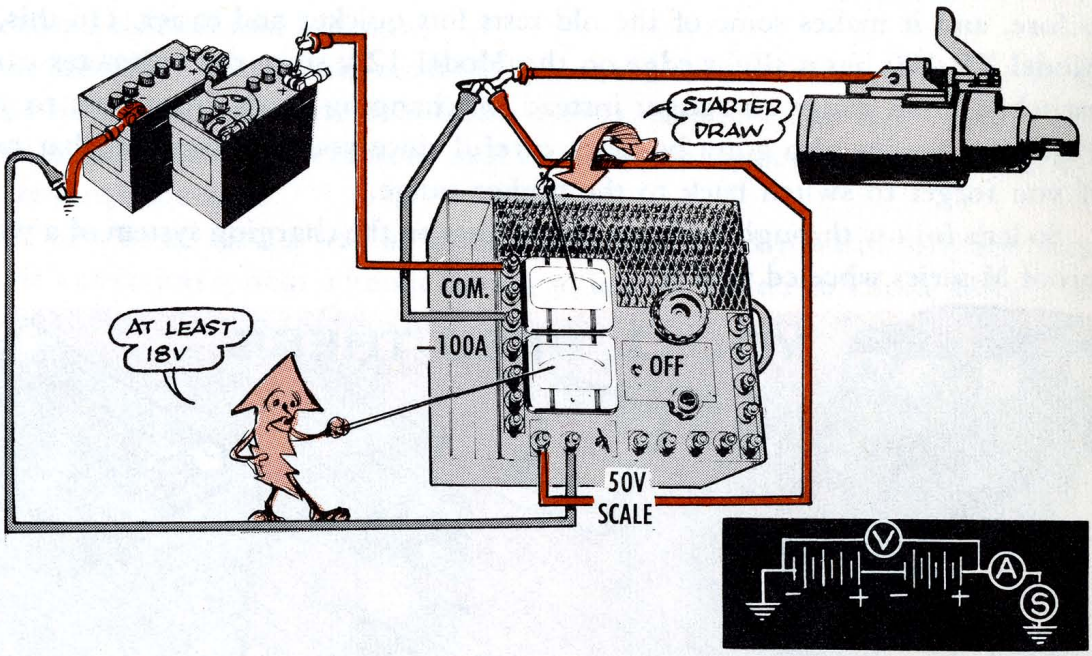
BATTERY TEST

First make sure you have good batteries. Begin with your hydrometer test, being sure both batteries test at least 1.225, temperature corrected, and that each battery and each cell in each battery is within 25 gravity points of all the others. Otherwise, send the batteries back to the shop and install a set of charged and matched ones.

STARTER DRAW TEST

You can now make your first hookup. This is made on the battery side of your vehicle, and will let you test battery cables and starter draw.



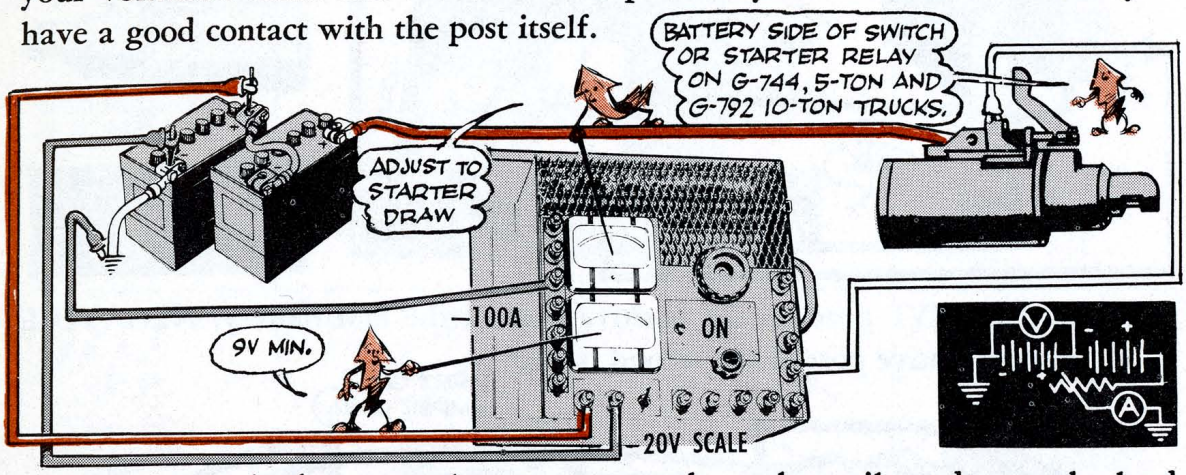
The load switch on the tester is left open, and the carbon pile knob is unscrewed—counterclockwise—until it moves freely. At this point, the voltmeter will show your battery voltage somewhere between 23 and 26 volts.

Now, with the vehicle ignition switch turned **off**, have your buddy hit the starter switch for not over 30 seconds, while you read the voltmeter and ammeter and note down the voltage that remains when the starting motor is cranking the vehicle engine. This voltage should be at least 18 volts to properly fire your ignition system.

The amperage you read is your starter draw. This should be between 45 and 60 amps on your 2½-ton trucks, and around 15 to 25 amps on jeeps. For other vehicles, check the appropriate manuals. If the starter takes much more or much less than it should, you may have worn bushings or some other drag —high draw; or perhaps loose or partially broken connections or bad brushes —low draw.

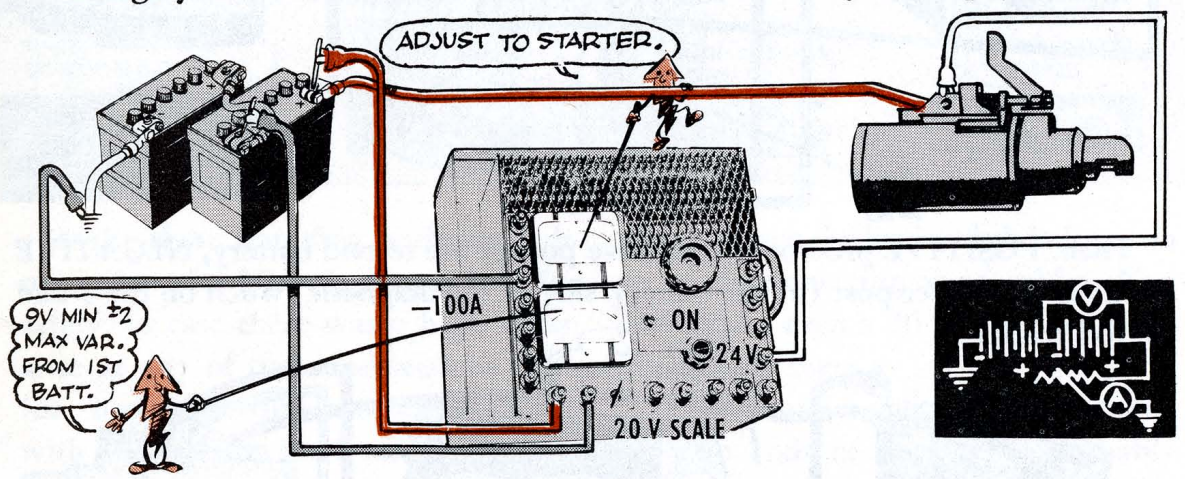
INDIVIDUAL BATTERY TESTS

For this test, and for the ones following, it's best to have some test prods, sharpened nails or short lengths of ⅛-in welding rod, which you grip in the clips of your voltmeter leads and shove into the posts of your batteries to be sure you have a good contact with the post itself.



Note down the battery voltage, unscrew the carbon pile and open the load switch.

Change your voltmeter leads over to the second battery and repeat the test.



Your batteries should be within two-tenths of a volt of each other, and should have not less than nine volts when under load. Nine is a minimum—good batteries will give you as high as 11 volts each.

If yours don't measure up, turn 'em in for a good matched pair. If they do give you nine volts each, you go on to test your . . .

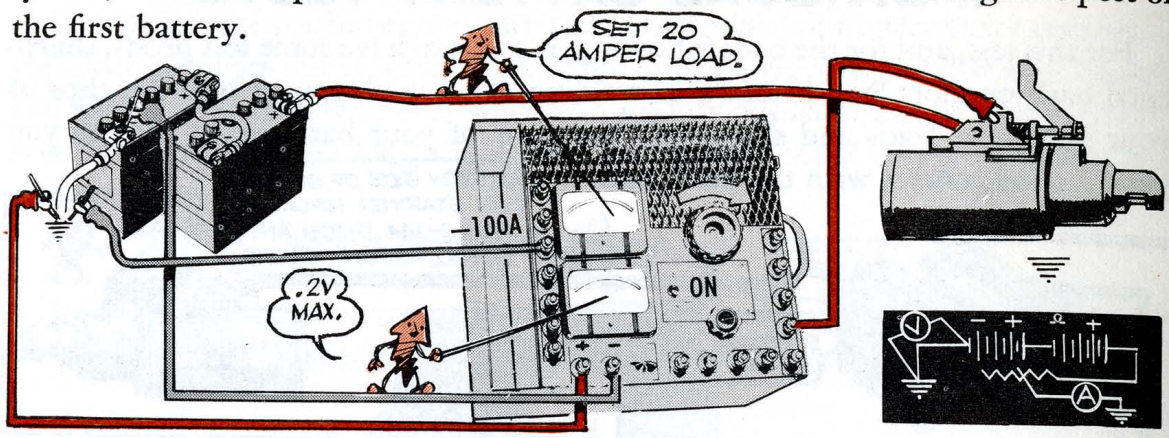
BATTERY CABLES:

This test is best done by two men.

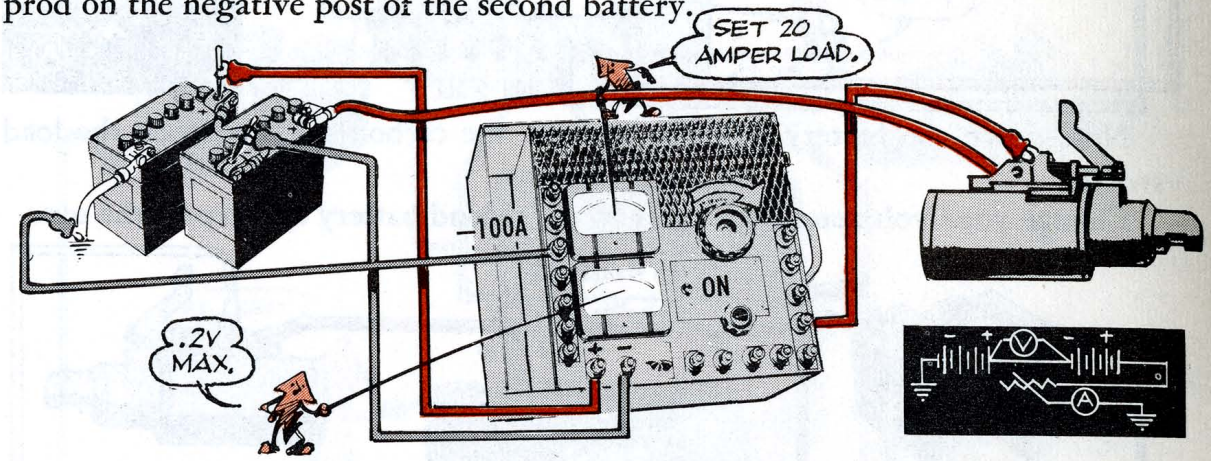
With the voltmeter on the —10 range, one man sets a load of about 20 amperes on the cables by closing the load switch and turning down on the carbon pile knob. The other man takes the voltmeter leads and rapidly moves from point to point checking for a voltage drop in the cable system.

Check the extremities of the cable

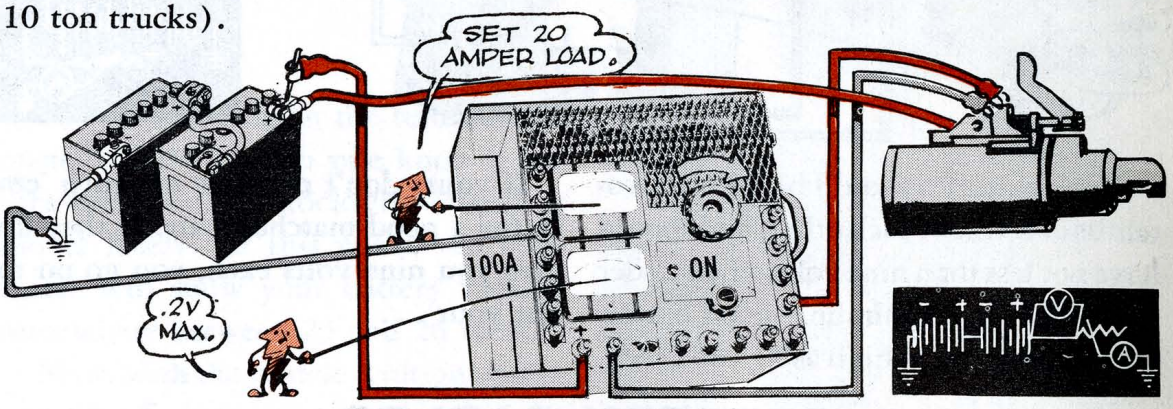
system, POSITIVE prod on the frame. NEGATIVE prod on the negative post of the first battery.



Then, POSITIVE prod on the positive post of the first battery, NEGATIVE prod on the negative post of the second battery.

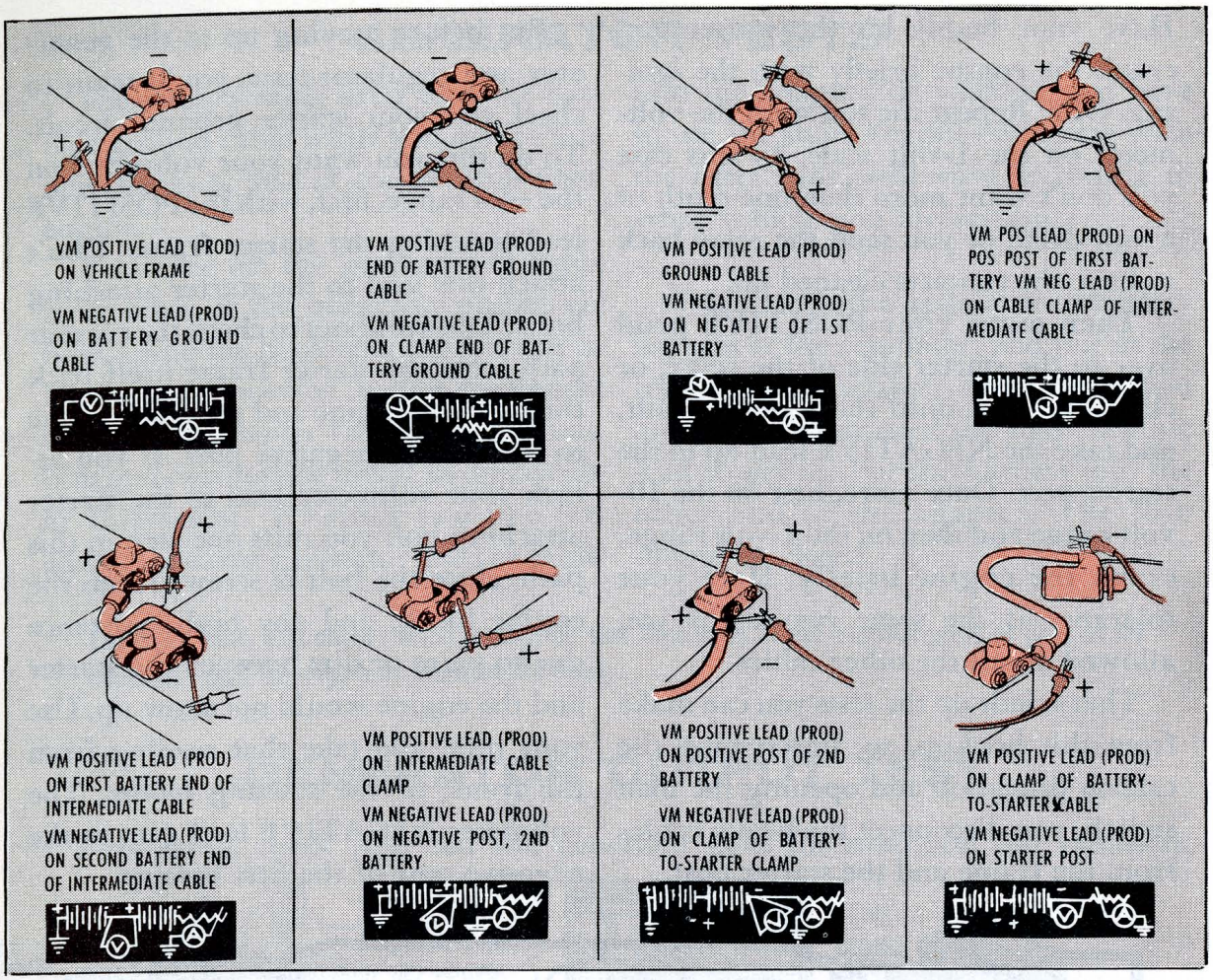


Then, POSITIVE prod on the positive post of the second battery, NEGATIVE prod on the starter post (or the battery side of the magnetic switch on the 5 and 10 ton trucks).



If no noticeable voltage shows during these tests, you quickly flip the voltmeter to the one-volt range and repeat 'em. You should not have more than two-tenths of a volt drop at any test.

If you find more than that, you'll have to go over the cables in detail and find where the high resistance is like this:



Make these tests first with the voltmeter on the 10-volt range just for safety, in case there was a high resistance at any of these connections. But, for service testing, make 'em again with the meter on the 1-volt range. You should **not** have any more than two-tenths of a volt at any test with a draw of 20 amperes.

If you do find a loss between any cable and the battery post, or between the cable and frame or cable and starter post, take off the cable, clean up both the terminal clamp and the battery post until the mating surfaces are bright and shiny, grease lightly and buckle 'em up again. That should get rid of your voltage drop. Be sure you loosen the carbon pile and open the load switch before you go to disconnecting your cables. You don't want even a 20 ampere arc flashing around there.

If you found a voltage drop between the two ends of a cable, it probably means broken strands, a loose lug, or corrosion, and you generally have to replace the cable.

At this point, you men with the 10-ton Macks, G-792 series, have two more tests to make.

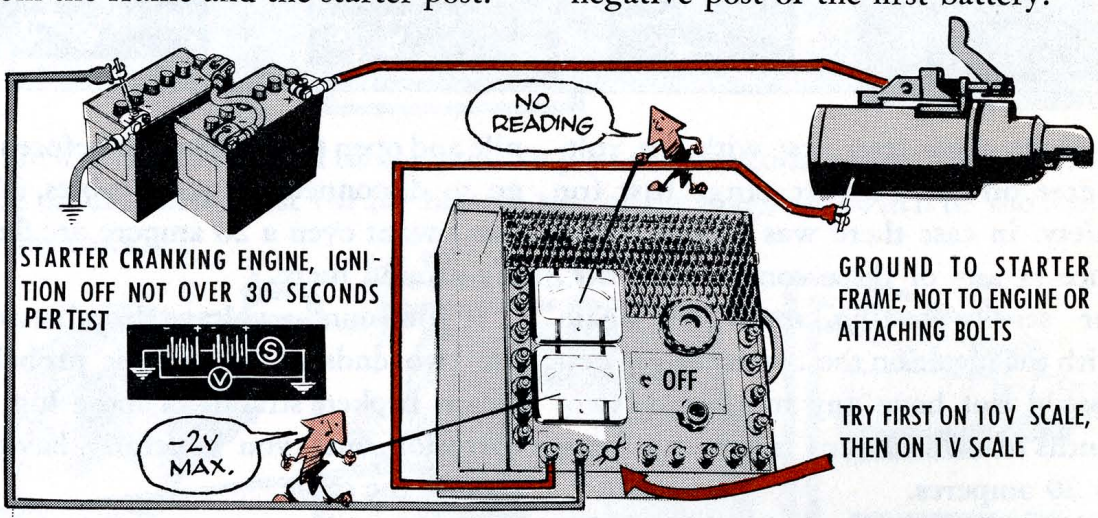
Disconnect your heavy cables and slide in under the right side of the truck with your voltmeter leads set on the —10 range. POSITIVE prod goes on the battery side of the magnetic switch, NEGATIVE prod on the starter side.

Have your buddy hit the starter and crank the engine briefly with the ignition OFF. Repeat the test with the voltmeter on the 1-volt scale. In this case you don't want more than one-tenth of a volt drop, or you send the relay back to have the contacts cleaned up.

Then move your POSITIVE prod over to the starter side of the relay, or clip your lead onto the terminal bolt, and take the NEGATIVE lead up to the starter post. Once more, first on the 10-volt range and then on the 1-volt range, crank the engine briefly. Here your tolerance is the same two-tenths you allowed on all the other cables.

That winds up the tests you can make from this hookup, so, unscrewing the carbon pile knob and opening the load switch, you disconnect the heavy cables from the frame and the starter post.

But before moving up to the generator and regulator tests, you'll want to check out your starter ground circuit. To do this you want your voltmeter on the —10 range, first, with the POSITIVE lead touching the starter frame. Don't attach this lead to the starter attaching bolts. You are about to check the current path from the starter frame itself back through the engine and the truck frame to the battery negative post. If you attach your voltmeter lead to the starter attaching bolt you miss one step in this path, since the bolt is screwed into the engine block, and any high resistance due to paint or dirt between the starter and the engine would not show up. Use your prod and take that reading from the frame of the starting motor. The voltmeter NEGATIVE lead goes to the negative post of the first battery.



Have your buddy hit the starter briefly and look for any voltage on the voltmeter. With the meter on the —10 range you shouldn't see any at all, and you then drop the meter over to the —1 scale and try again. If you find over two-tenths of a volt on this test, you remove the starter, clean up the attaching flanges and the mating surfaces on the engine and put it back. If you still have a voltage drop, check the grounding straps between the engine and the truck frame.

You are now ready to set up for your . . .

GENERATOR TESTS

For safety's sake, drop off your battery ground cable while you make your next hookup, and of course, stop your engine.

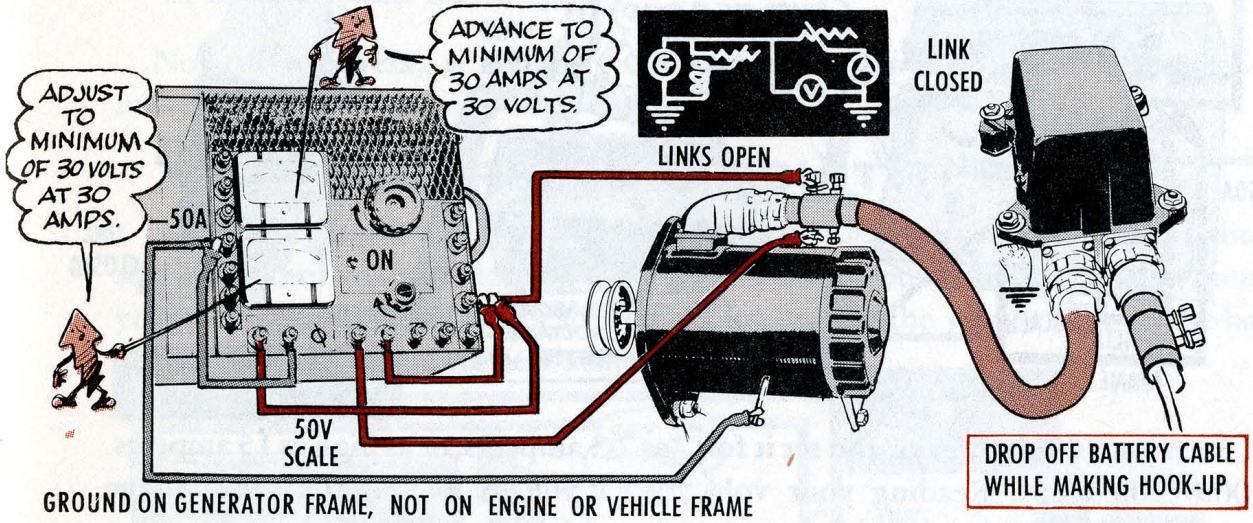
You take off the generator-to-regulator cable at the generator output elbow, using the hook-spanner wrench to loosen the connector. Install the generator testing adapter (the one with three pins and two outside links) in the circuit at this point. Whether you put the adapter into the generator and the cable into the adapter, or whether you have to use the short flexible connector with the three pins, will vary according to what vehicle you are testing.

Take loose the regulator-to-battery harness at the regulator, and put in the regulator test adapter. Once more, you may or may not need the short flexible lead to get in. Put the harness into the other end of the adapter. The link should be closed.

CAUTION: Now, and always while testing, be sure that none of the exposed posts or links of the adapters touch the engine or frame of the truck.

GENERATOR OUTPUT TEST

First thing, check your fan and generator belts for condition and tightness.



When you've completed your hookup, put the ground strap back on the battery so you can start the engine.

But, just as a precaution, before starting the engine, flash the generator to be sure it's correctly polarized. Turn the field rheostat knob all the way clockwise and bring a hot jumper over and touch it briefly to the armature post of the generator test adapter. You can get your hot current from the starter post, the positive post of the second battery, or from the battery post of the regulator test adapter, whichever is handiest according to the vehicle you're working on. Turn the field rheostat knob back

counterclockwise.

After you've flashed the generator, start up the engine and set it to run at a good high idle (1000-1200 RPM.) You should see a slight indication of voltage on the voltmeter, perhaps five to 10 volts.

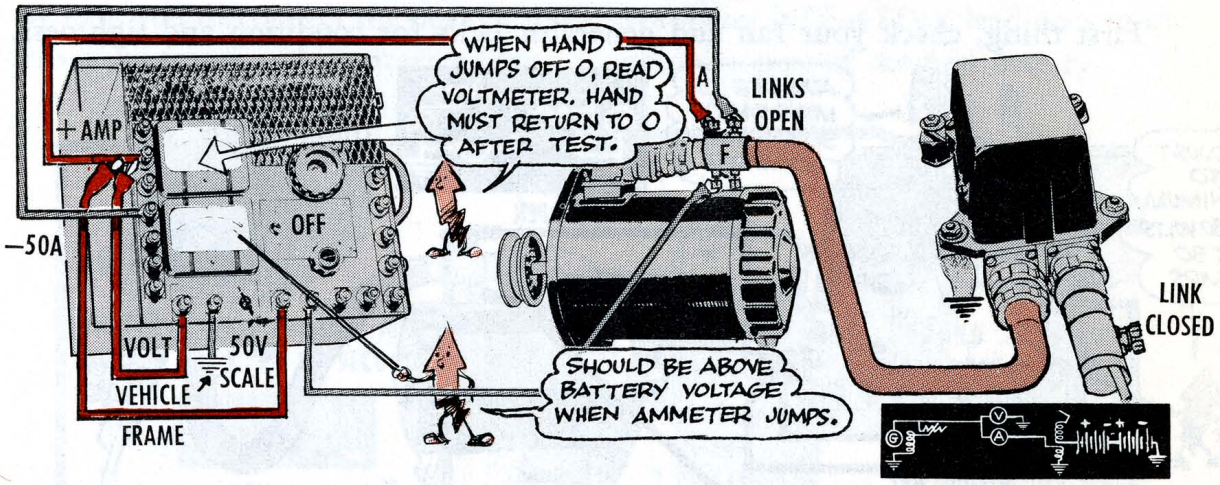
Turn the field rheostat knob slowly clockwise, and you should see the voltage rise. When you have somewhere between 25 and 30 volts shown on the voltmeter, close the load switch and slowly turn the load bank control knob clockwise. Your ammeter will show you what current you're drawing.

You'll notice that as the amperage comes up, the voltage will fall off. Turn both knobs clockwise until you have drawn at least 30 amperes at 30 volts from your generator, then promptly turn the field rheostat knob back counterclockwise, loosen the carbon pile knob, and open the load switch. Stop your engine.

Now you have proved that your generator is OK, and will put out just a little more than its intended output. If it won't, replace the generator and test again. When you get the proper output, you're ready to move on to your . . .

REGULATOR TESTS

It's not necessary to take the battery ground cable off when shifting the tester leads for the next test, since you won't be dealing with any hot terminals.



Start your engine again, and set it for 1000-1200 RPM. Reading your voltmeter, and watching your ammeter, **slowly** turn the field rheostat knob clockwise. At some point **above** battery voltage (24-26V) and **below** your regulated voltage (27-29V) your ammeter should move off zero and show a charge. The exact rate of charge will depend on the condition of the battery, and does not matter for this test. It may be as low as 2-3 amperes, or as high as 15 amperes. What you are looking for is the voltage at which the reverse current relay closed, and that is whatever the voltmeter showed at the instant the ammeter hand jumped off zero. (This isn't as hard to read as you might expect, if you advance your field rheostat knob slowly enough, because the voltmeter has a tendency to stop rising when the load comes on the generator.)

Now turn your field rheostat knob back counterclockwise and watch your ammeter. You will notice that the ammeters on these testers are arranged to read a reverse current as well as a forward current. This current is indicated on the scale to the left of zero on the dial. As you cut down on your generator output by backing off the field rheostat, the ammeter will come back to zero and then go **below** zero. This means that the generator's output voltage has fallen below battery voltage, and current is now flowing back from the battery to and through the generator.

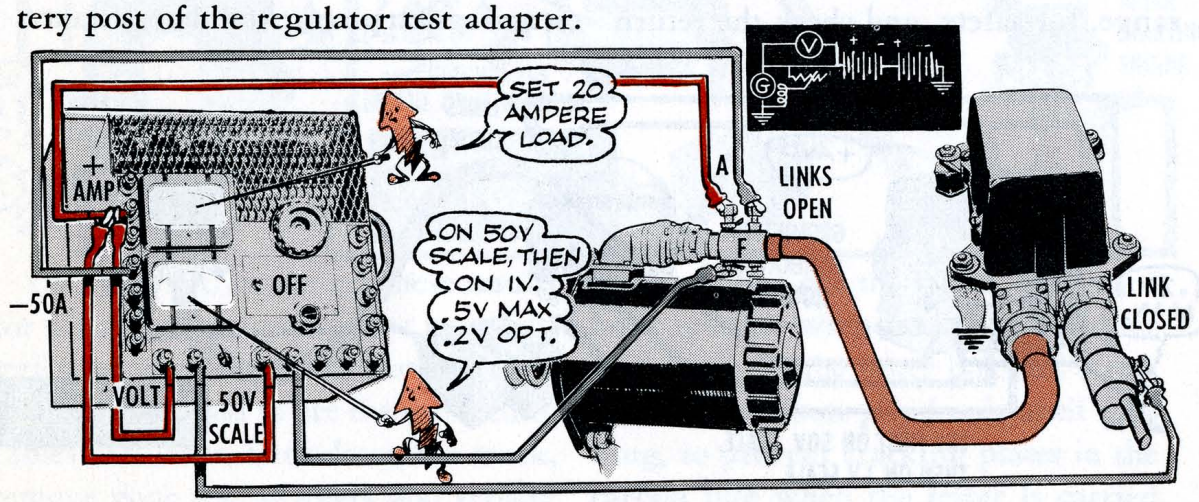
As you continue to drop the generator output, this reverse current will increase until at some point the reverse current relay opens and disconnects the generator. You'll know when it happens because your ammeter will return to zero. The exact figure at which this happens is unimportant. It may be as low as five amperes, or as high as 20. Just as long as the hand **does** return to zero when your generator is not charging, you're all right.

CAUTION: Be prepared to take loose an ammeter lead in a hurry on the one chance in a million that your reverse current relay does not function when you drop the generator output. Because a generator which is not charging and is not disconnected from the battery will draw a heavy current, and may overload the meter or cause other trouble. If the ammeter hand does not drop back to zero before it reaches the left end of the scale, yank a lead, fast! And of course, you replace the defective regulator and test again.

Now, if your relay is behaving OK, only one change of lead is necessary to make the . . .

CHARGING CIRCUIT TEST

With your engine still running at 1000-1200 RPM, advance your field rheostat knob until you are showing a 20-ampere charge on the ammeter. Now move your voltmeter NEGATIVE lead from its ground on the vehicle over to the battery post of the regulator test adapter.



Your voltmeter should fall to zero, or so near to zero that you can't tell the difference on the —50V scale. This again is a precautionary test to prevent burning out your voltmeter, just in case there is a real high resistance in the charging circuit.

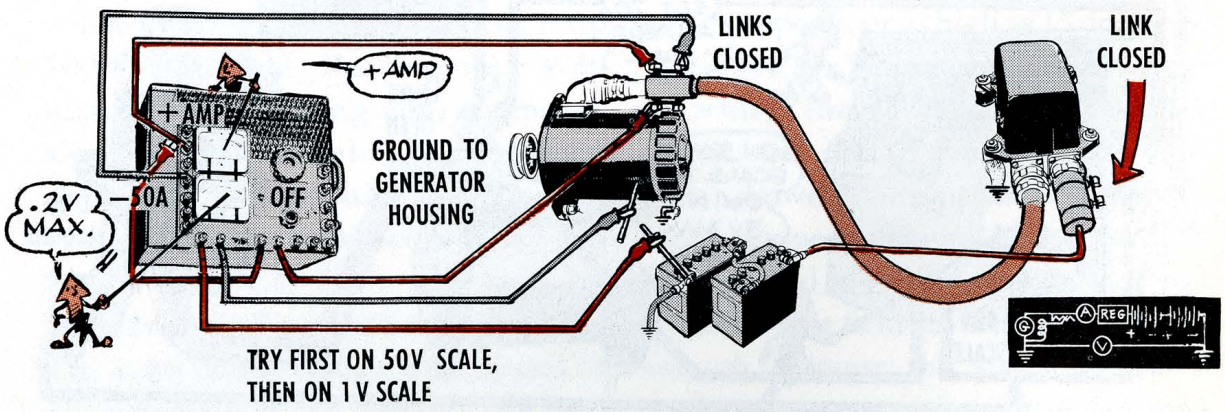
To get down to cases, you next change your voltmeter lead at the tester end to the —1V scale. (Or move the range switch, according to which tester you have.) You should not have over .5 volt at the outside on this test, .2 is better.

If you do find more than .5-volt drop between the generator output post and the battery post, first of course check all your tester connections and clips to be sure you are getting a true reading.

Then try replacing the generator-to-regulator cable with a new one and test again. If this doesn't fetch it, you'll have to replace the regulator, but put the **old** cable back on the vehicle and test it again—these cables almost never give trouble.

OK, so your positive side of your charging circuit is OK. You can now shift your voltmeter back to the —50V range, for safety, and check the return circuit from the regulator back to the generator. Your voltmeter POSITIVE lead goes to the case of the regulator, the voltmeter NEGATIVE lead to the frame of the generator. Once more, if everything is OK, you won't see any measurable voltage while your meter is on the —50V scale, and you are therefore safe to shift it back to the —1V scale. On this circuit you don't want over .2 volt. If you show more, check the regulator ground straps, the mounting bolts, and the mounting flanges of the generator, etc., to see that they are clean and tight.

Some of you will see at once that when you take the adapters out and reconnect the generator-to-regulator cable, you will be setting up another path for this ground circuit down the shielded cable. Yes, you will, and such high resistance between the vehicle frame and the generator or the regulator has little effect on the regulator's function. BUT, remember that you're out to use this generator to charge a battery, and the ground return **from** that circuit has to come through the mountings. This just happens to be the quickest and easiest place to test the resistance.

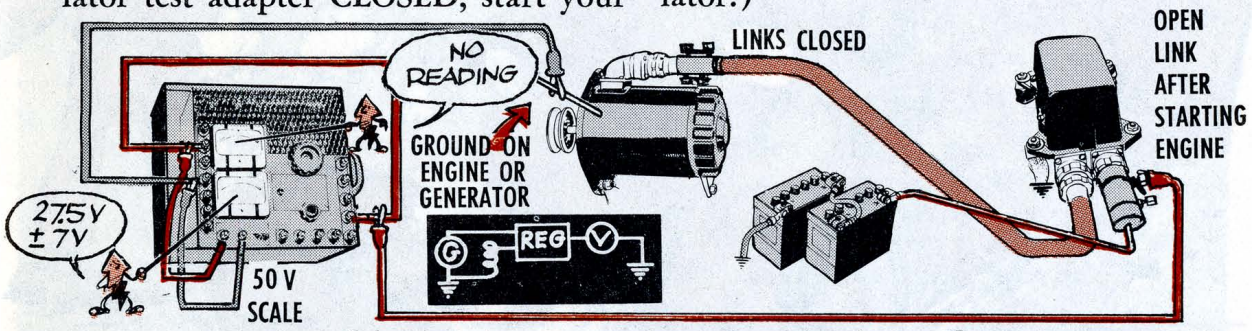


Now shut down your engine and you can change your hookup to make your...

VOLTAGE REGULATOR AND CURRENT LIMITER TESTS

Here you have y'r choice. You can either take out the generator test adapter and hook the generator cable back up, or you can close both links of the adapter.

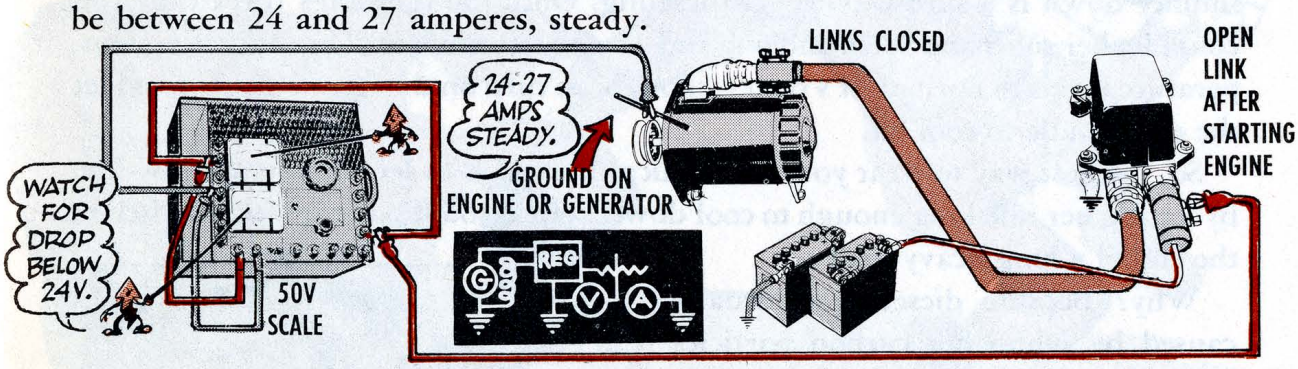
With the battery link on your regulator test adapter CLOSED, start your engine and set it for 1000-1200 RPM. Then open the link. (Some vehicles can't be started with this link open, because the ignition current must pass through the internal ammeter shunt in the regulator.)



Now, with the adapter link open, and the load-bank load-switch open (off) you are getting the "open-circuit voltage" at which your regulator is set. This should be between 27 and 29 volts, and should hold steady when you gun the engine. If it is not in this range, replace your regulator.

Trucks suffering from chronic low batteries, which get very little running, need a regulator setting in the top of this range. Talk to your support if you have a problem like this, and they can set you up some special regulators.

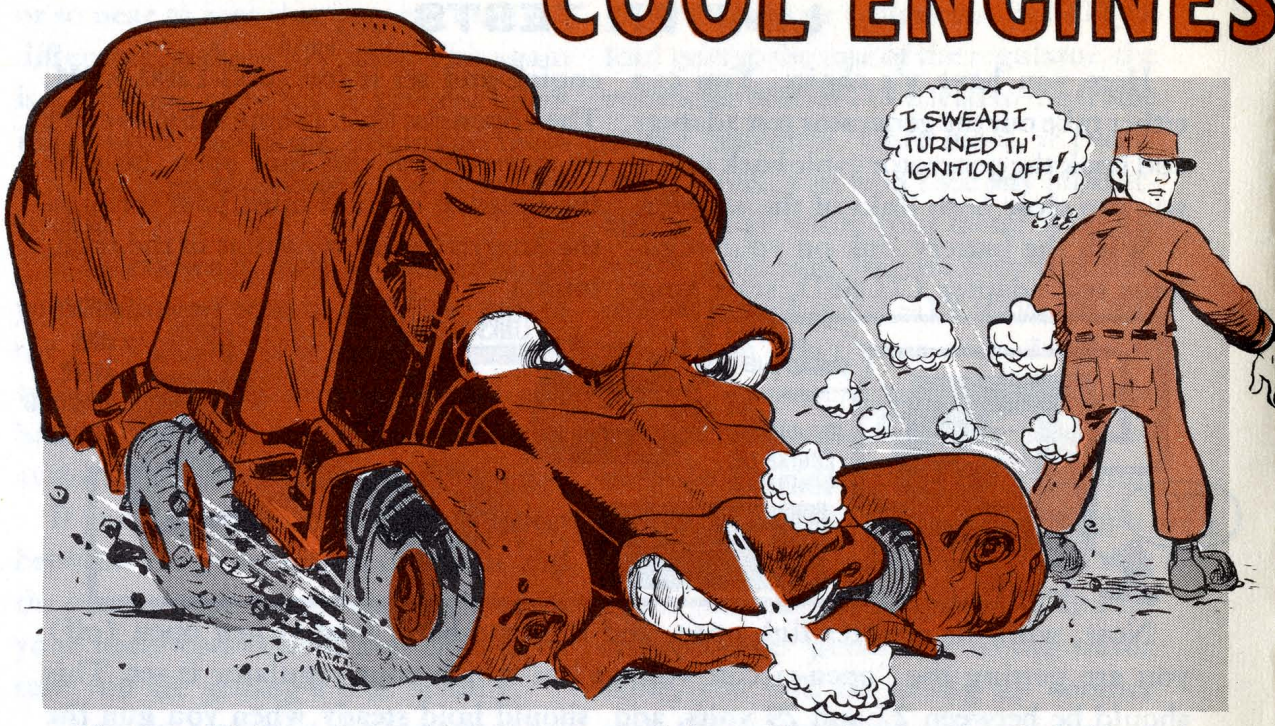
If your open circuit voltage is OK, you then close the load switch and tighten your carbon pile adjusting knob to load up the generator. Increase the load until the voltmeter drops back below 24 volts, and read the ammeter. It should be between 24 and 27 amperes, steady.



OK, that's it. If you get these results for all these tests, you know your batteries, generator and regulator are all working OK, and so are the connecting cables and leads. Shut down the truck, remove your test adapters and replace the cables in the connectors, setting 'em up snug, but not too tight, with your hook-spanner wrench. Coil your tester leads away in the tester box and screw down the carbon pile knob until it is snug, to prevent cracking plates in the carbon pile when the tester is carried around.

HO! DRIVERS!

COOL ENGINES



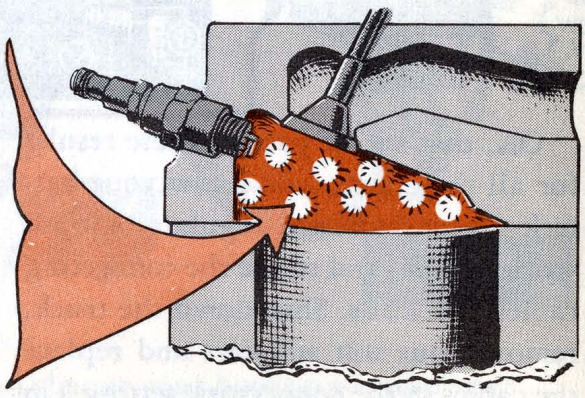
You wouldn't catch an old Army wagon driver riding his team hard all day and then putting them away wet. The same goes for that mechanical horsepower riding under your truck's hood.

Try thinking about that high-stepping engine block as a fire-eating, air-breathing mechanical horse and you'll see what I mean. Your engine needs a cooling off period same as you do after a hard day's run.

Hopping out of the cab without giving your overheated engine a chance to simmer down is a sure way to get dieseling. Once the ignition's turned off you could let her snort and belch and pop and paw the ground until her operating temperature drops to normal. It's better, though, to turn on the ignition again and let the engine idle to cool off.

So, the best way to treat your mechanical animal is to let 'er ease up slow-like by letting her idle long enough to cool down before you flip the ignition switch at the end of a long heavy-load run.

Why? Because dieseling is usually caused by white hot carbon particles still suspended in the combustion chambers—or clinging to the tops of the pistons. When the engine's overheated, these carbon particles are still hot enough to ignite the atomized gas in the combustion chambers without any help from your spark plugs.



DON'T DIESEL

With clutch jobs, there's one emergency-type deal you can use as a last resort. Try for an intentional stall, first making sure nobody's standing close. Then lock the hand brake... hold both the clutch and foot brake in... shift to high... then, in a normal manner, let out **just** the clutch... not too fast.

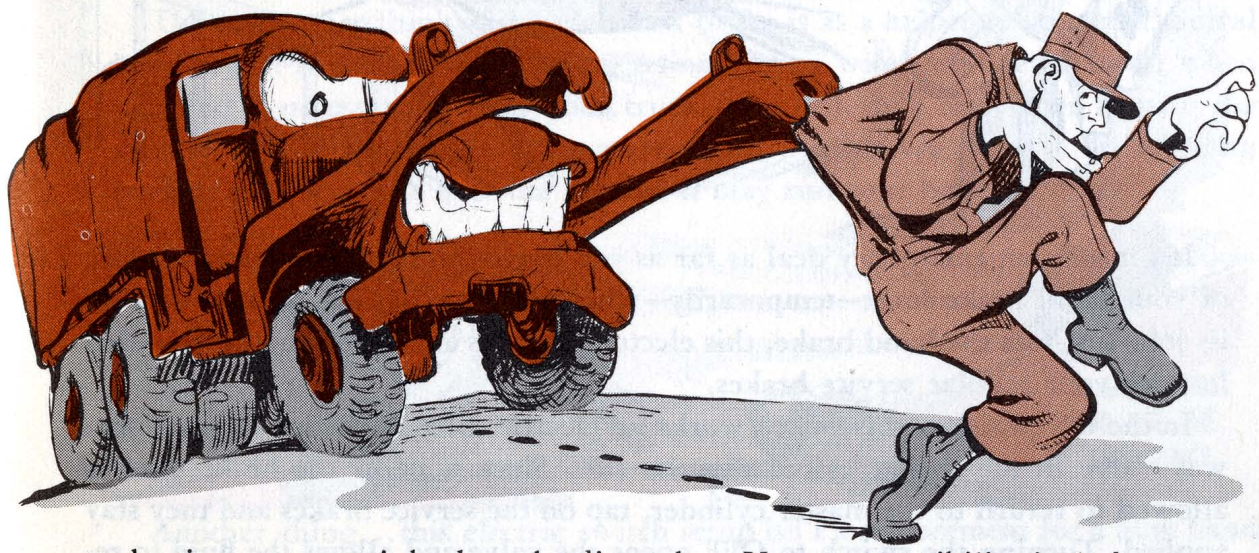
In general, you shouldn't run into much dieseling trouble on the newer type engines the Army's using... unless you been pushing that baby around unusually long and hard. So, whenever dieseling becomes a habit with your truck and several minutes of idling won't do the trick, ask your mechanic to give your vehicle a checkover.

A defect in the cooling system's the most common cause for unnecessary overheating. You might ask him to check for signs of rust or scale in the coolant, possible leaks, a stuck thermostat or a water pump that's not doing its job.

When the cooling system's in good working order and you still get overheating, it's time to look elsewhere... like poor engine compression, faulty carburetor, bad lubrication, clogged exhaust or the ignition system—particularly the plugs. Could be you've got the wrong plugs in your engine. If so, your mechanic can dig out the scoop on when to use hot or cold plugs from a copy of TM 9-8638 (Dec 56).

You won't have much trouble with dieseling, though, if you remember that the smart driver always plays it cool by remembering his responsibility.

When your name's on the trip ticket you practically "own" that vehicle right up



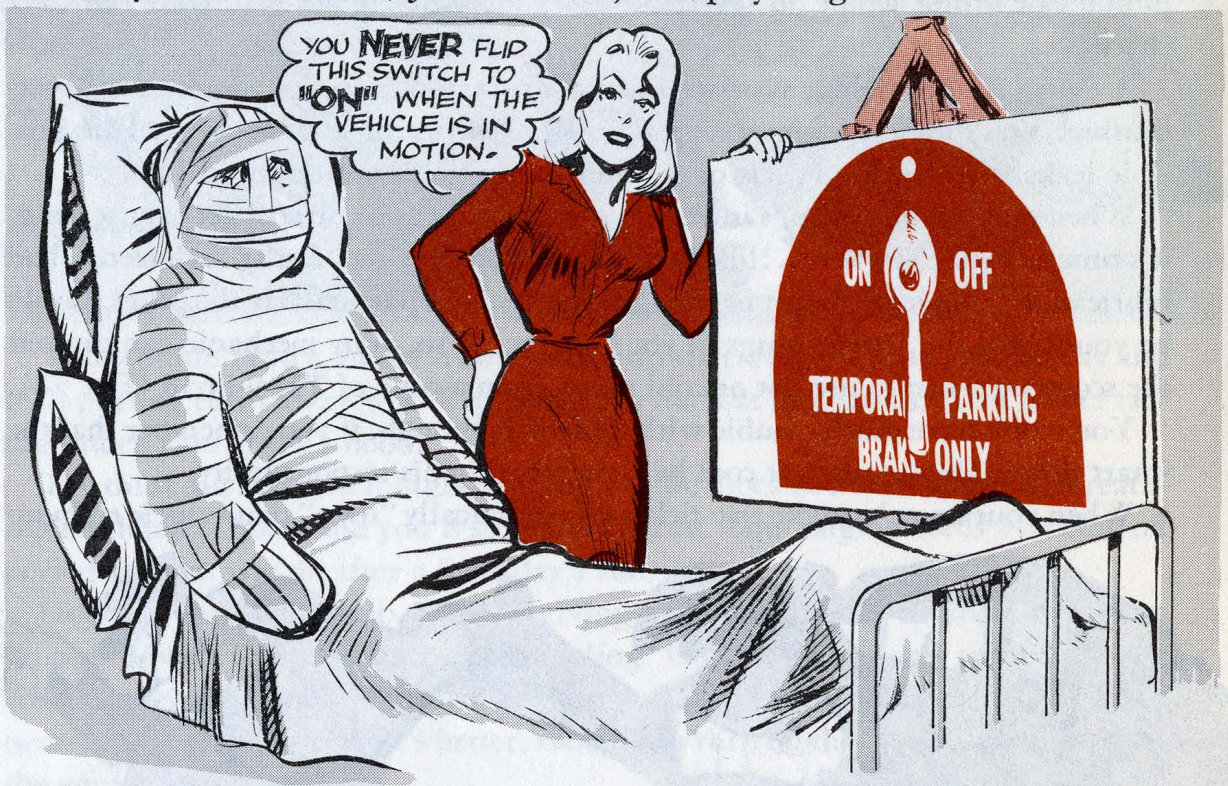
to the time you turn it back to the dispatcher. Your responsibility includes staying in your cab every minute that engine's running—and calling the mechanic's attention to that dieseling trouble by marking it on your trip ticket. That engine may be even harder to shut off after the next long run—if you don't let the mechanic know about it.

ON THE G-749 SERIES TRUCKS . . .

IT'S FOR EMERGENCY

Maybe it doesn't happen too often, but you **can** lose your hand brake when you're trying to keep your wheels at attention.

That's one of the reasons that temporary parking brake switch is sitting up there on your truck's dash, Joe . . . it's not just a plaything for foolish hands.



It's mostly an emergency deal as far as you're concerned. It can take the place of your hand brake lever—temporarily—when your mechanical brake won't do its job. Just like the hand brake, this electrical deal is also a holding device—tied in with your regular service brakes.

In the ON position, this switch works an electric solenoid which closes a one-way valve in the master cylinder outlet line. Since none of the brake fluid is allowed to return to the master cylinder, tap on the service brakes and they stay applied. Turning the switch to OFF opens the valve and allows the fluid to return to the master cylinder, releasing your brakes.

The difference between this electrical temporary parking brake and your hand-operated mechanical parking brake is that you can vary the holding power according to how hard you tap your service brakes. A light tap will put a slight drag

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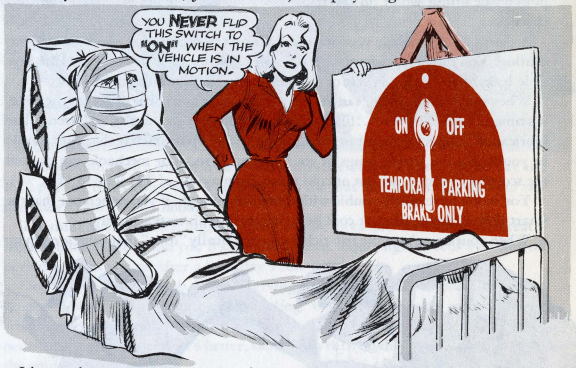

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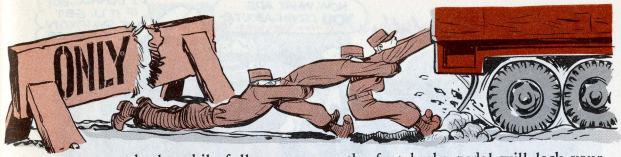


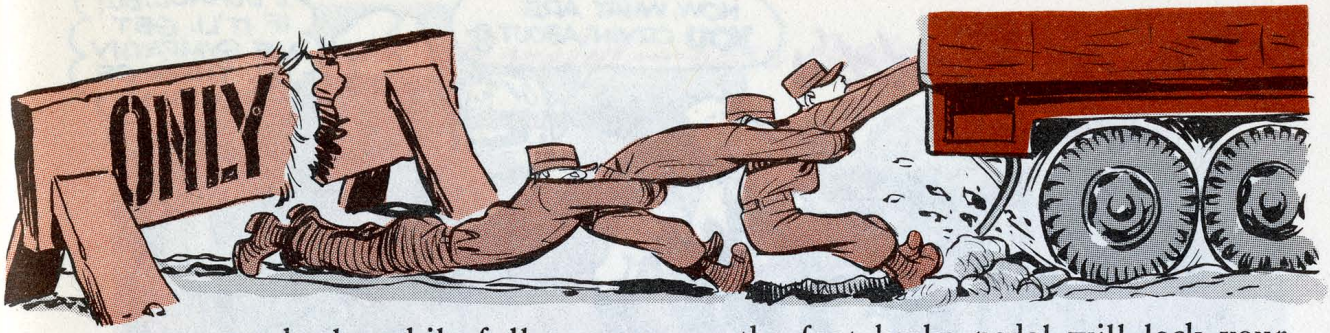
on your wheels, while full pressure on the foot brake pedal will lock your wheels. Since your brakes won't release until you switch back to OFF, you can add to the wheel drag by putting more pressure on the foot pedal. You can keep this up until you reach the point where your wheels are completely locked.

That's why you think twice before you decide to flip that switch to ON while you're moving. In combination with poor vehicle handling, putting a quick, sustained drag on your wheels can cause your truck to pull some weird maneuvers ...particularly where the going is slippery or around a curve.

The best way to think of this electrical brake is as a helper to your mechanical hand brake. It means extra holding action during winching operations or when you find it necessary to park your truck on a hill. Just remember to turn the switch to OFF before trying to move again. And never leave it on for long periods of time...like overnite because it may run your batteries down.

Another thing...this electric switch setup isn't a replacement for a bum hand brake. Since the temporary parking brake uses the same air-hydraulic system as your service brakes, only the mechanical hand brake will give you an emergency holding action when the service brakes go on you.

So, see your mechanic first chance you get about an adjustment or repair job when that hand brake isn't in top working order.



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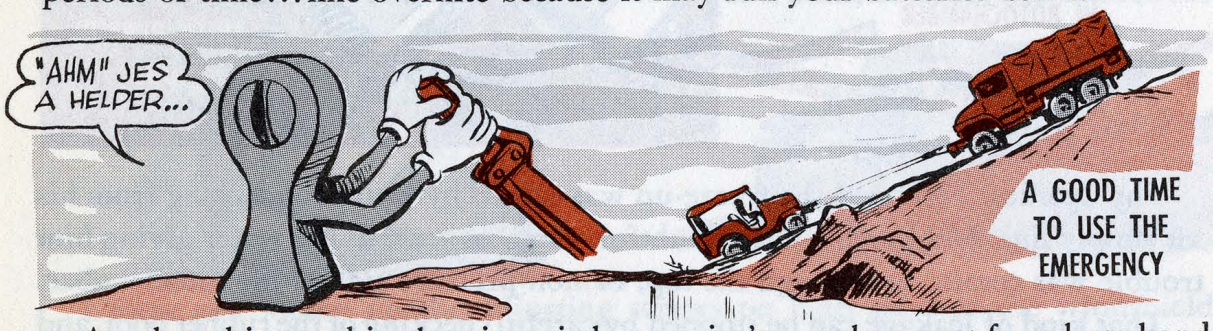

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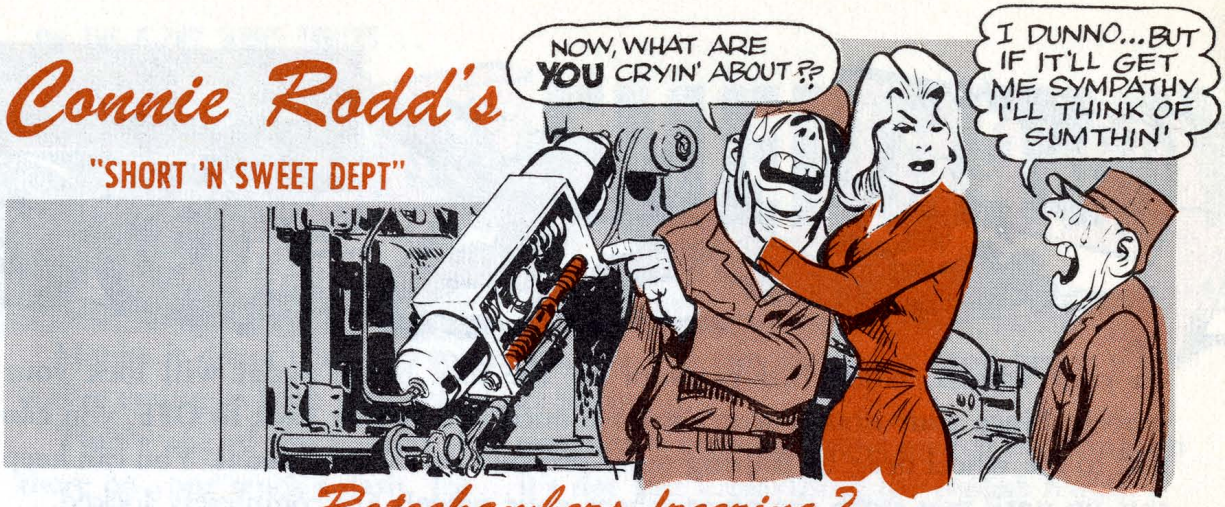
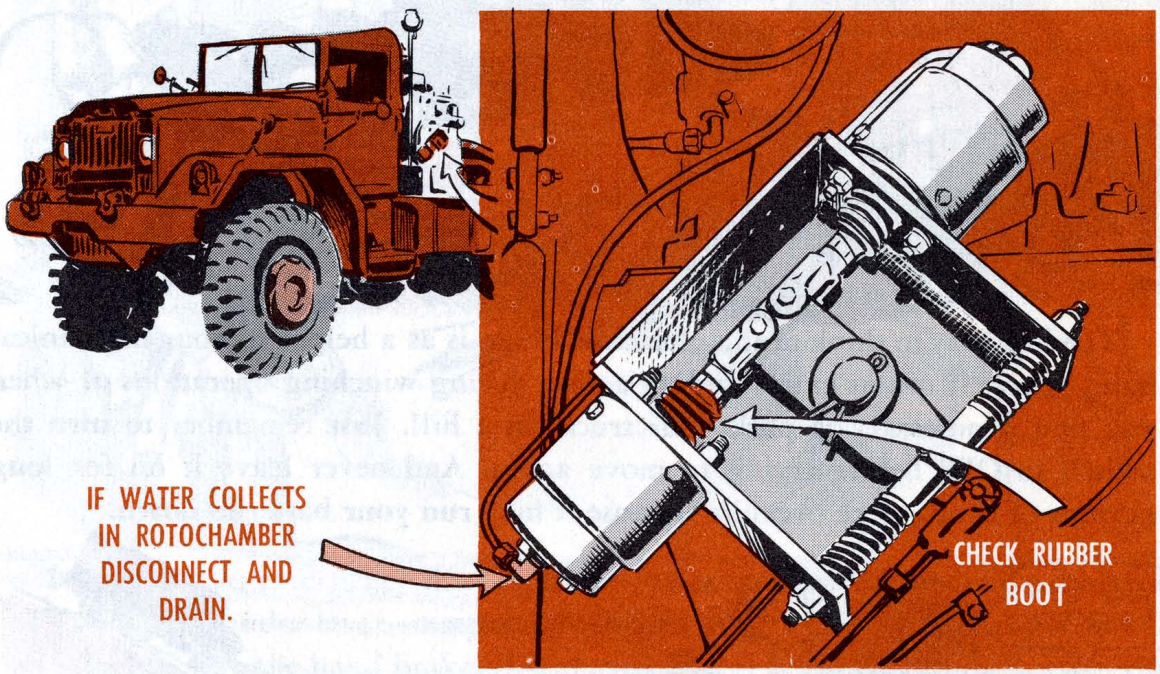
Connie Rodd's

"SHORT 'N SWEET DEPT"



Rotochambers freezing?

Heard an M123 10-ton truck-tractor operator cryin' bitterly the other day. Claimed he needed a drain point at the bottom of the lower slanted rotochambers on his winch controls because they were freezin' up on him in cold weather.

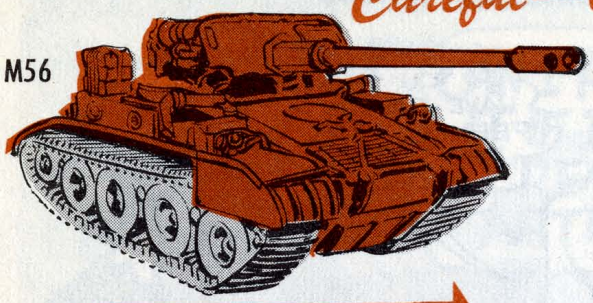


The operator reckoned the freeze-up was caused by water condensing from his air supply line. Mebby so, but it's doubtful. Chances are that the water giving him trouble was comin' in through the top, or non-pressure side of his rotochamber.

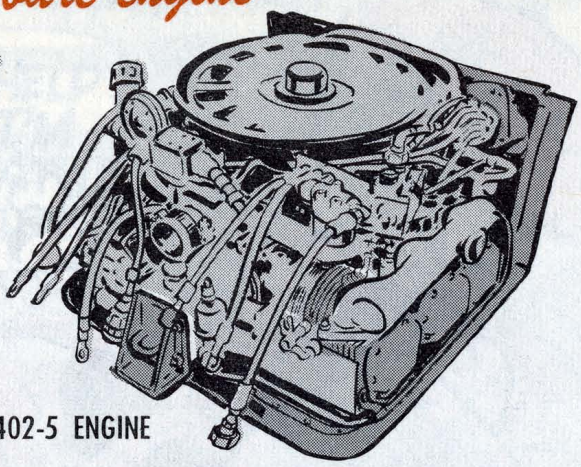
That kind of leakage can be stopped by careful checking of the rubber boot, and by taking the cover off the cylinder and coating its edges with Permatex or some similar sticky-goo, then setting it back together right snug like.

O'course, if the winch is being used a lot in freezing weather, a bit of water from the air system may condense in the lower rotochambers. If it does, you can disconnect the rotochambers, drain 'em and replace 'em as often as it's needed.

Careful—bare engine



BE CAREFUL RUNNING THIS ENGINE WHEN IT'S OUT OF ITS SHROUD



A01-402-5 ENGINE

When you pull the AOI-402-5 engine in your M56 SP gun and run it outside the vehicle for any maintenance reason . . . you've got to be careful. For instance, when operating the engine on a test stand.

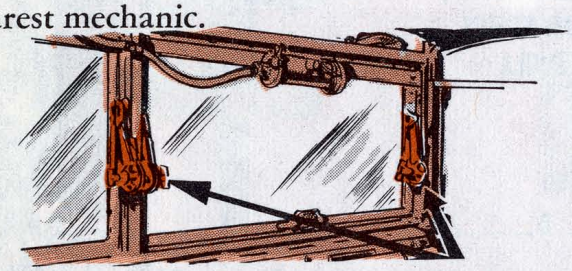
You see, the Scorpion's engine compartment was 'specially designed for this engine to give it the right kind of cooling. So without this shrouding the engine will overheat and get damaged.

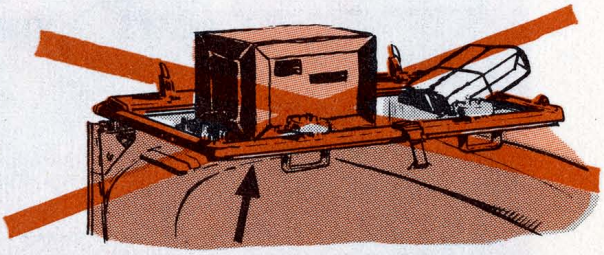
If you have to run the AOI-402-5 engine outside the M56, for checking the fuel injector, timing or making minor adjustments:

1. Don't run the engine for more than 15 minutes.
2. In this 15-minute period, run the engine in two shifts—five minutes at 800 RPM for a warm-up and not more than 10 minutes at 2000 RPM, or less, with no load.

Easy on the windshield

Strong-arming your windshield into an open position will make you unpopular in the motor pool. If your tilt adjustment's out of whack, be smart and call for the nearest mechanic.

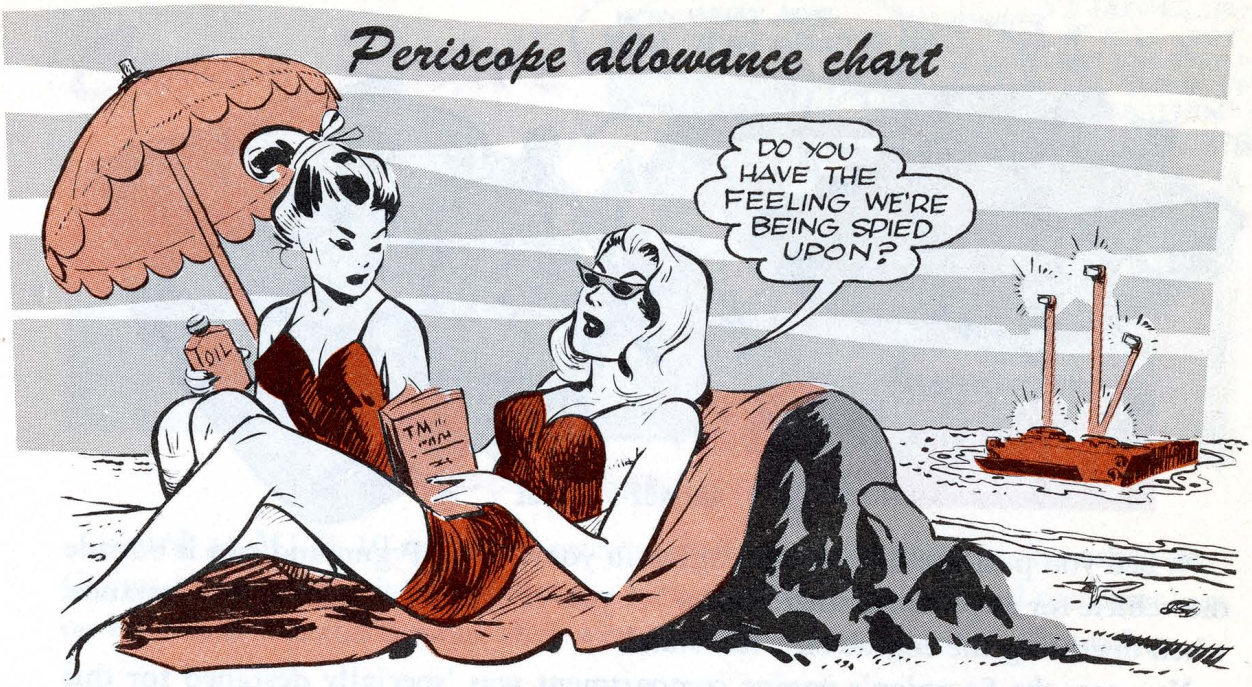




Unless you loosen up the adjusting screws on both sides of the windshield evenly, you're going to put a strain on that glass that can crack it with the first hard knock or sharp road shock that comes along.

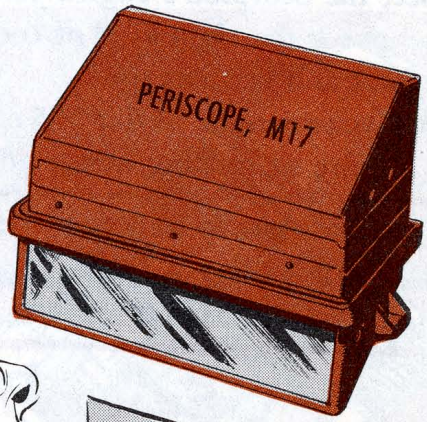
There's an added danger when you're driving a vehicle with the windshield lowered against the cowl. It's an easy-to-break piece of glass, even though it might look like a temporary cargo platform when in the lowered position. So remember, it's not a handy resting place for boxes, tools, spare parts, your elbow or feet.

Periscope allowance chart

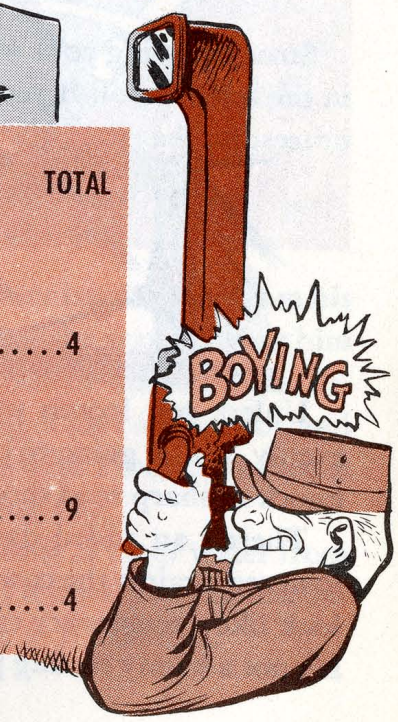


There're three different types of commander's cupolas on the M59 APCs due to production changes . . . so things are apt to get a bit confoos-ing as to how many M17 periscopes your vehicle rates.

Here's how she shapes up:



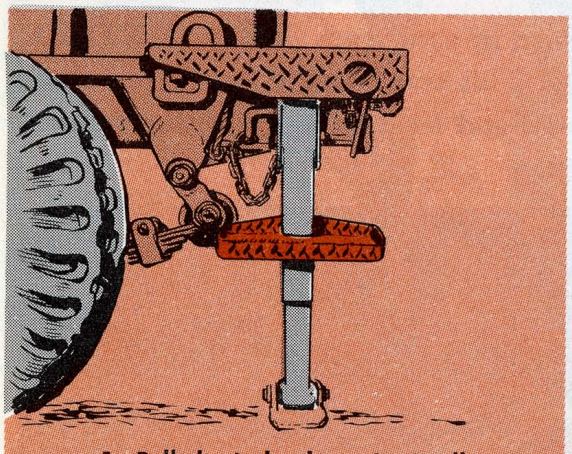
CUPOLA TYPE	DRIVER'S COMPARTMENT	COMMANDER'S CUPOLA	SPARES	TOTAL
Cupola equipped with six vision blocks, no periscopes (vehicle F7 to F1312)	3	0	1	4
Cupola equipped with four M17 periscopes, no vision blocks (vehicle F1313 to F2941)	3	4	2	9
Vehicle equipped with M13 cupola	3	0	1	4



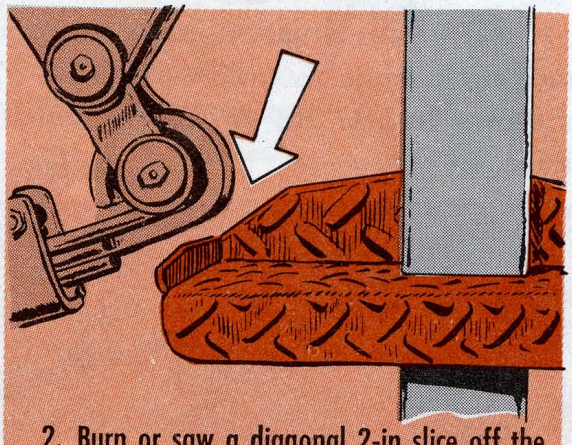
Those steps on the leveling jacks (and step) on your M200A1 generator trailers causin' you trouble? Especially the trailers purchased under contract No. DA-23-072-1023 (Spencer Stafford)?

Seems that with generators mounted in 'em, the added weight causes the rear spring shackles to swing backwards. Now, when you wanta raise or lower the jacks, the steps'll hit the shackles and it's just no go.

There's a way to get those jacks to swing up and down real easy. Get your CO's okay to let you do a little cutting on that step. Since he has command responsibility for these trailers, he can give you permission to:



1. Pull the jacks down (vertically).



2. Burn or saw a diagonal 2-in slice off the step's corner.

The angle to take when making the cut can best be judged by you—this may vary slightly on each trailer. Might be a good idea to have the generator on the trailer so you can't go wrong.

Now, the steps should move up and down as easy as the ol' farm pump handle.

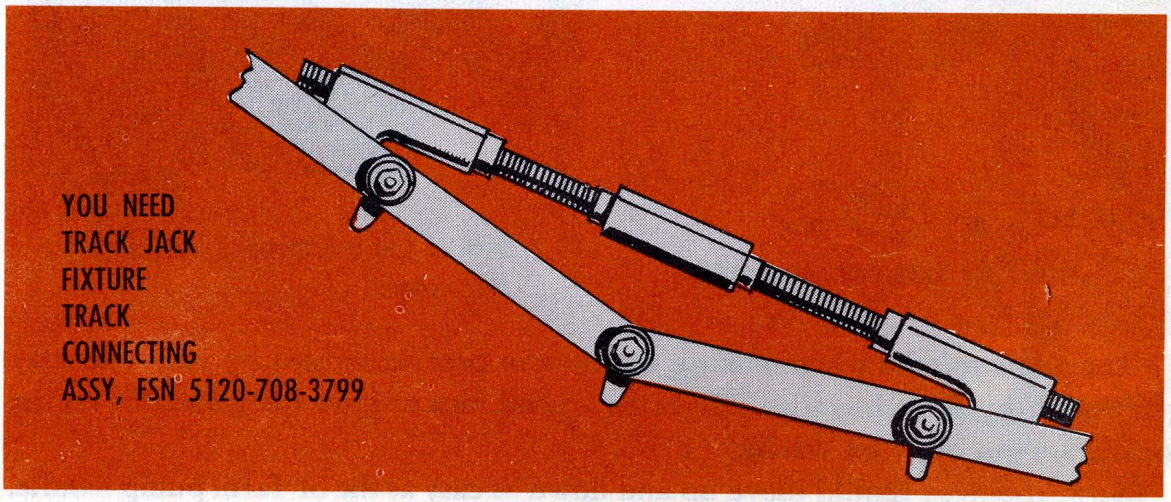
Replacing the fixtures

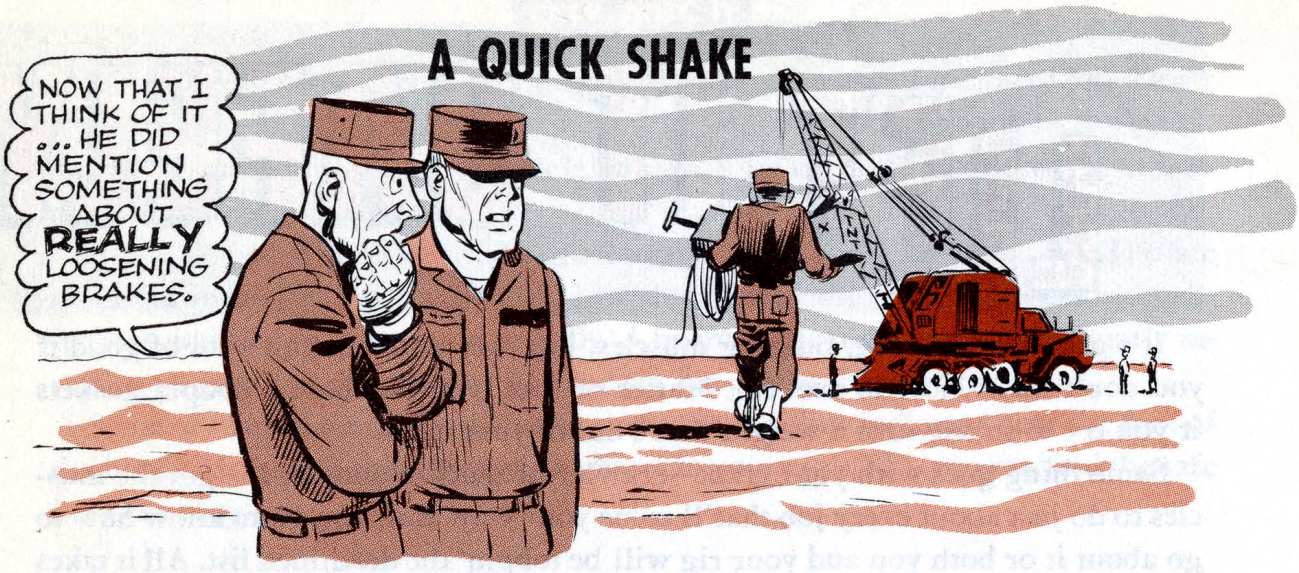
Got troubles installing a track or removing the link pins on these vehicles?

M59 APC (G280)
M84 SP mortar (G280)
M42 Twin 40's series (G253)
M52 SPH series (G258)
M44 SPH series (G279)
M41 Light tank series (G251)
M75 AIV (G260)
M8 Cargo tractor series (G252)

Could be that you've got track fixture, FSN 5120-605-3926. This jack isn't large enough to catch three track pins, which allows free movement of one pin to make it easy to aline the holes for the link pin.

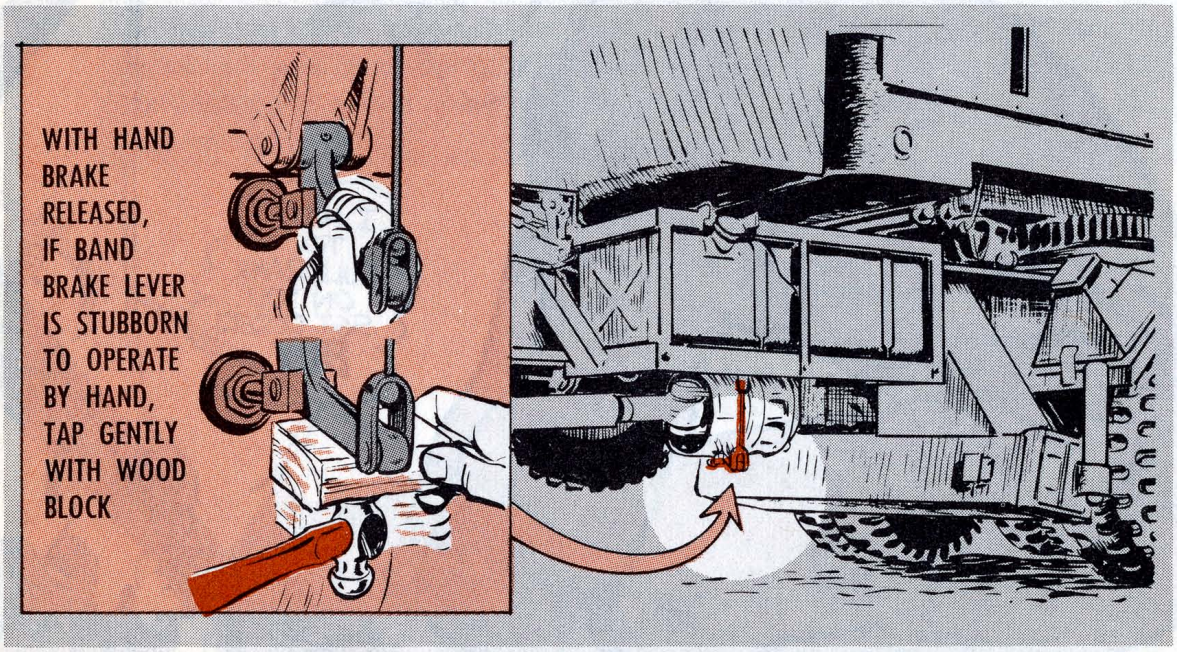
If this is your situation, make sure you turn in your track jack for FIXTURE, track connecting, assy, FSN 5120-708-3799. This track jack'll catch four shoes as shown in FIG 209 of TM 9-2300-203-12 and let the track pin slip in much easier.





A quick shake.

That's what it takes to make sure that the emergency brake on your FWD crane-carrier has been released from the drum. Sometimes, when the brake is left on between periods of operation—such as overnight—the band'll freeze to the drum, especially if the brake's hot when you stop.



If you start off with the brake locked, you'll get plenty of drag—and not the kind that'll do you any good. Stop your rig on level ground, and double-check to see that you've released the hand brake lever. Then, climb down and operate the brake band lever by hand. If it's stubborn, tap it gently with a wood block. If this doesn't work, call a mechanic. But, make sure the band's free before you go on your way.

If you wear the band down, you can score and cut the drum before you know it.

LIFT IT SAFELY

It's great to have big, bulging muscles, but they don't do you a lot of good if you don't know how to use 'em. Matter of fact, you can bust a coupla gaskets if you try to strong-arm a weight that's out of your class.

Same thing goes with your crane—crawler or truck-mounted. It's got the muscles to do just about every job that'll come your way. But, you gotta know how to go about it or both you and your rig will be toppin' the deadlined list. All it takes for a smooth operation is some good old common sense when you make your lifts.

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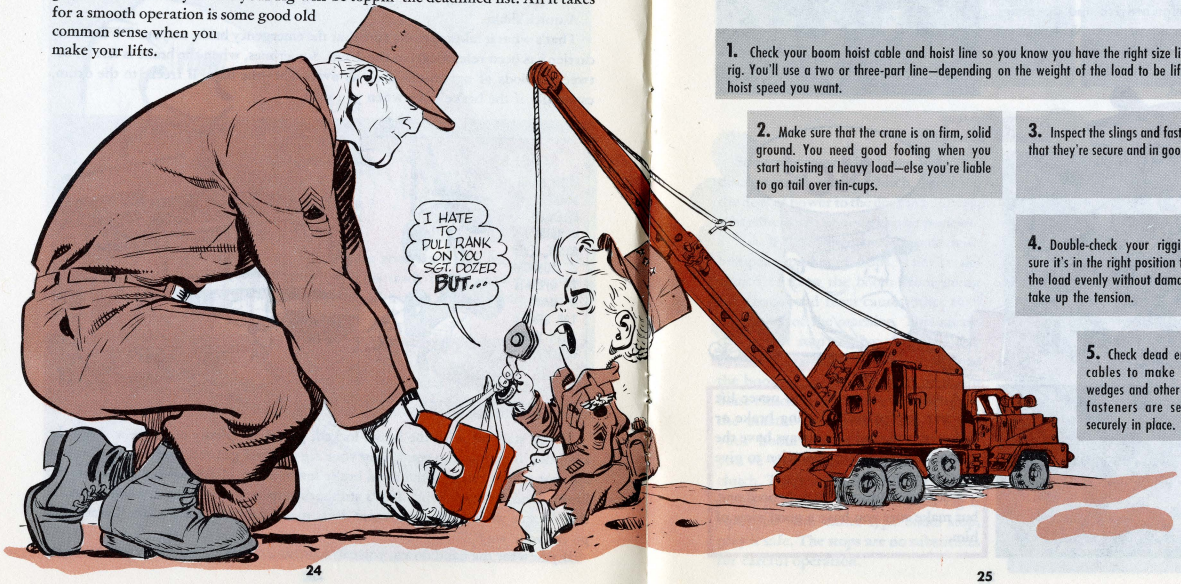

EASY DOES IT

First off, you want to be sure that your rig has the muscles to do the job. Don't try to tackle a job that's going to be a blockbuster. A guy can be a top lightweight, but he doesn't mess with heavyweights unless he's ready to collect on his hospitalization—or insurance.

If you've one of the late model cranes that have a rated load capacity ID plate mounted inside the operator's cab, it'll clue you to the operating radius, boom lengths and lifting capacity in pounds. A boom angle indicator is also usually installed to give you the capacity of your rig for any position of the crane.

Some of your older cranes are equipped with a radius indicator near the foot of the boom. If you use this along with charts in your rig's TM, you can find the safe load capacity.

1. Check your boom hoist cable and hoist line so you know you have the right size lines on your rig. You'll use a two or three-part line—depending on the weight of the load to be lifted and the hoist speed you want.

2. Make sure that the crane is on firm, solid ground. You need good footing when you start hoisting a heavy load—else you're liable to go tail over tin-cups.

3. Inspect the slings and fastenings. See that they're secure and in good condition.

4. Double-check your rigging to be sure it's in the right position to balance the load evenly without damage as you take up the tension.

5. Check dead ends of all cables to make sure that wedges and other dead-end fasteners are secure and securely in place.

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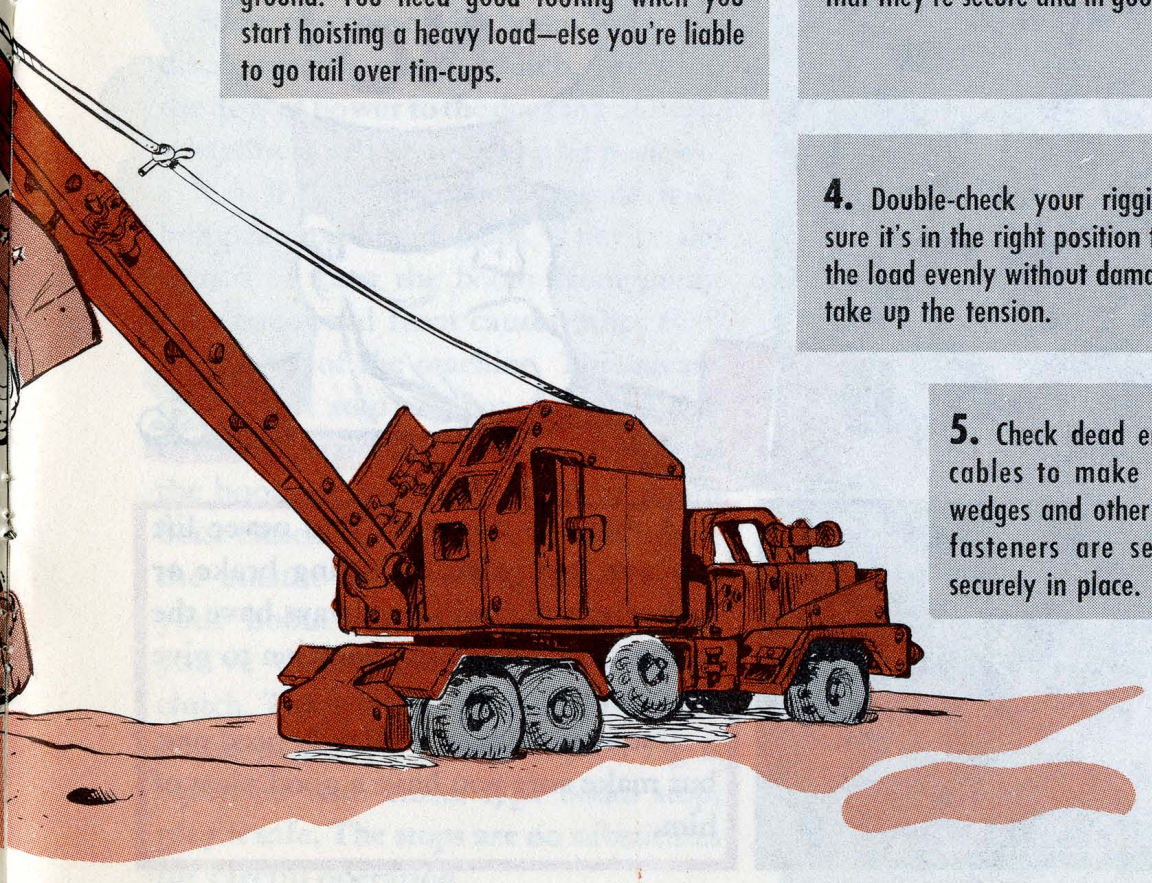
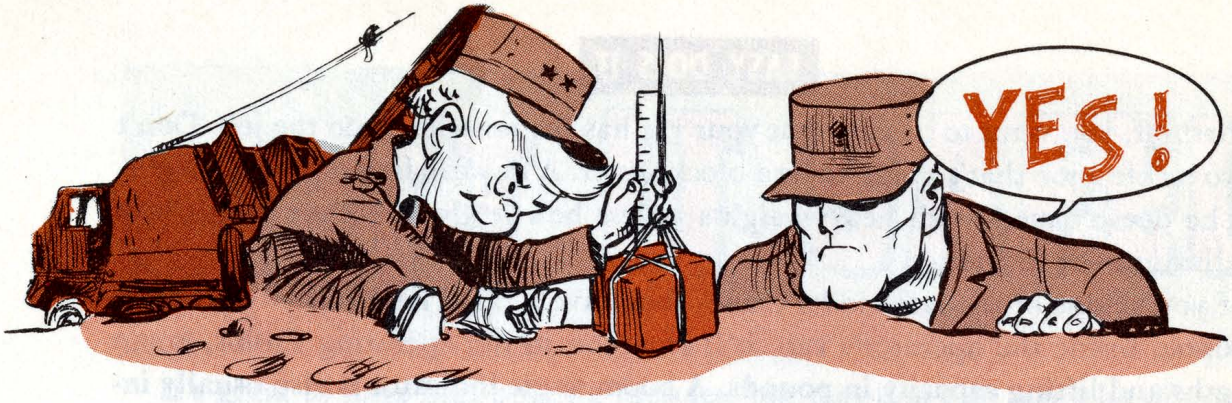
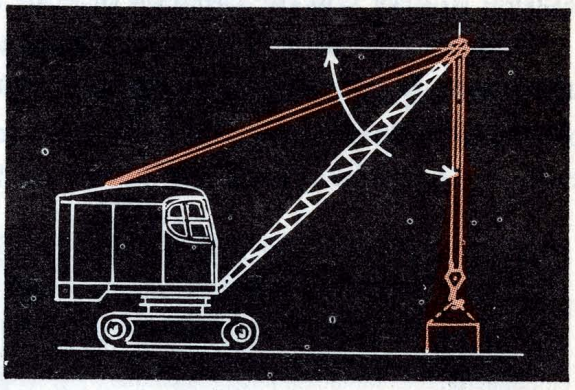
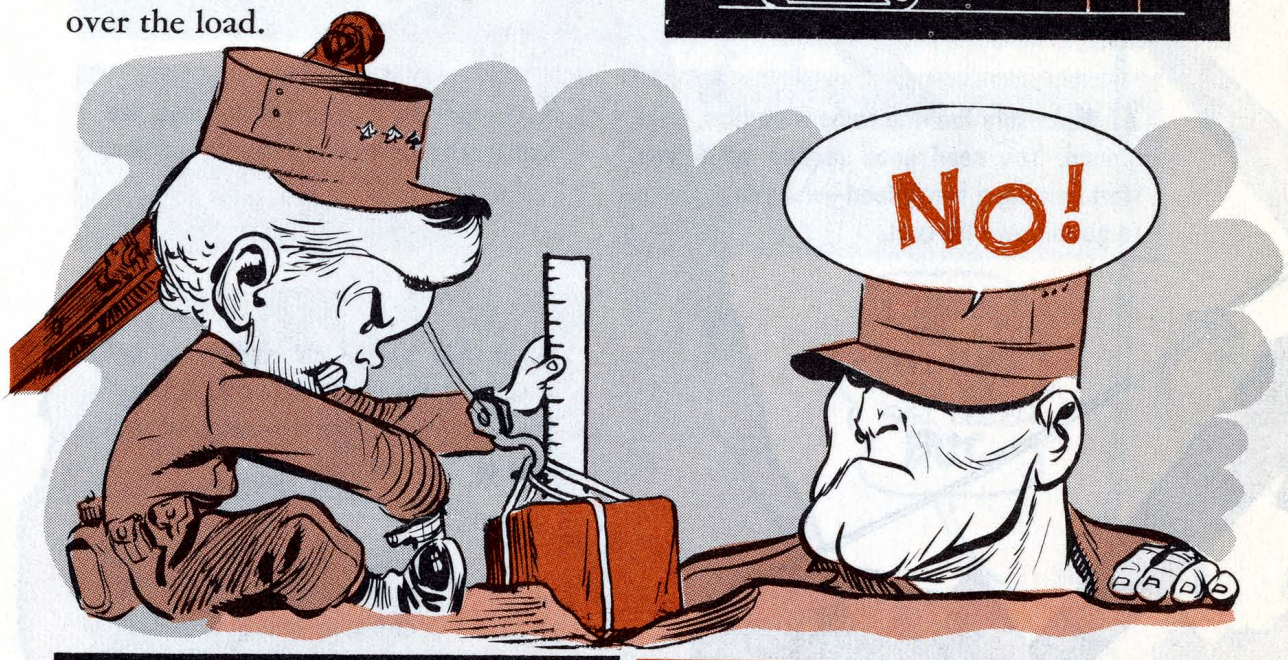
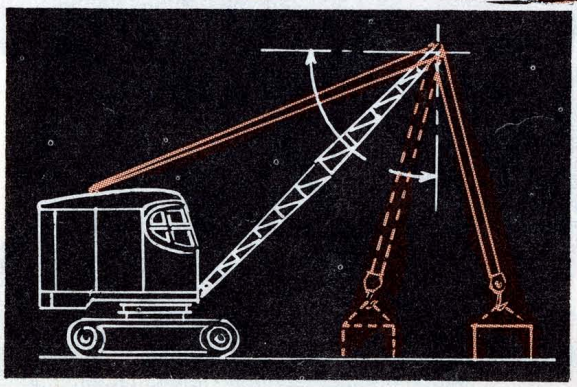




Your crane should be close enough to the load to give you a safe boom angle. The best deal is to position the crane boom directly over the load, you engage the swing clutch drive and disengage the swing brake or lock. Now, tighten up a little on the load and position the boom so lines are straight up and down over the load.





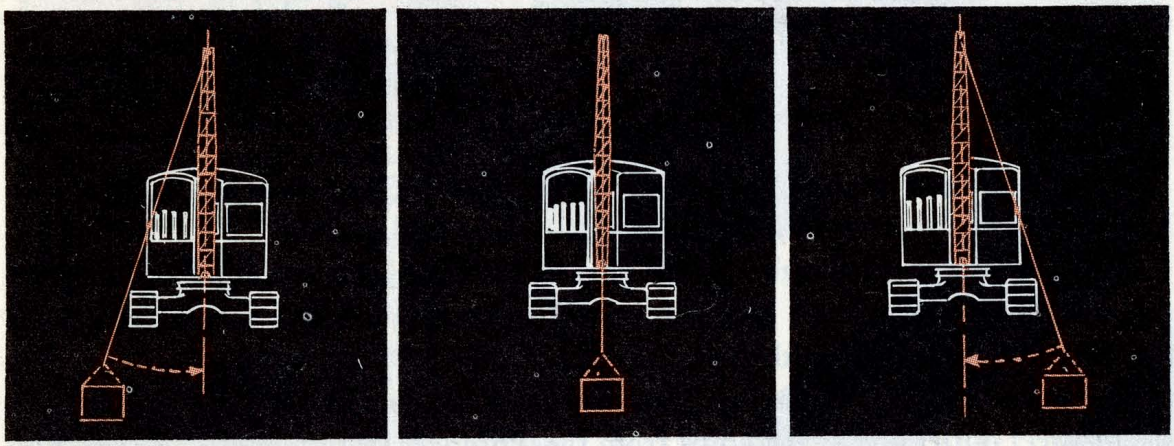


A word to the wise. You never lift a heavy load with the swing brake or lock engaged, and you always have the swing clutch drive in operation to give you control of the rig.

Use a signalman. You only need one, but make sure you have a good view of him.

CRANE BOOMS

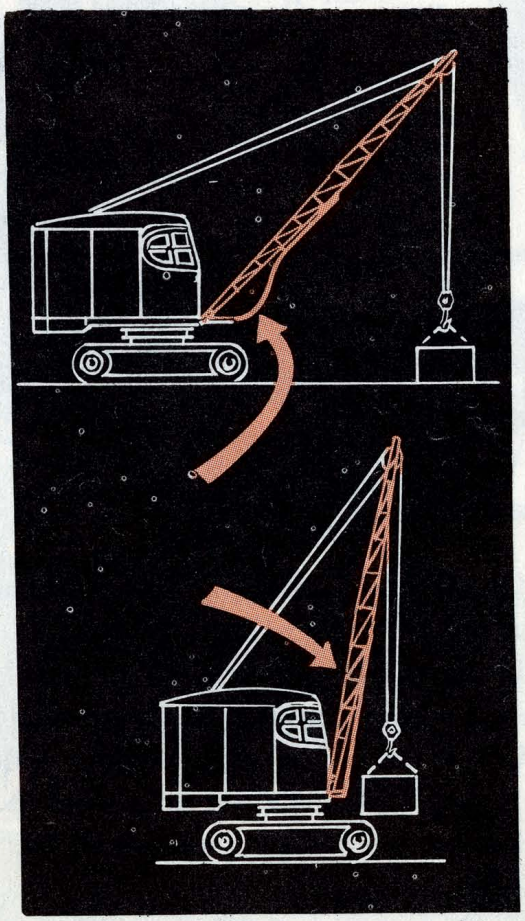
Crane booms are designed to take heavy loads and stresses directly below the boom point. Loads off to one side will get you into trouble by causing too much side stress and strain—and your boom could buckle. Also, loads not under the boom point move when lifted, which could send your rig toppling.



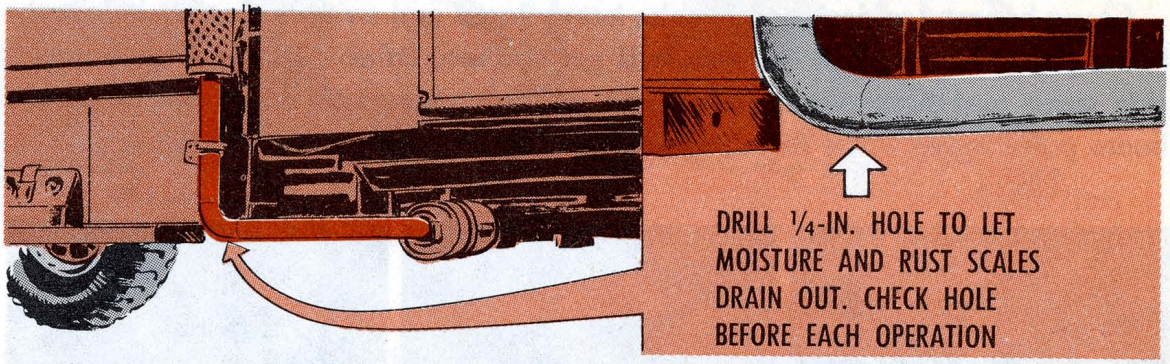
BOOM STOPS

Some rigs come with boom stops that disengage the master clutch, breaking the flow of power to the deck machinery, when the boom is raised to a set position.

You'll find other cranes come with bumper-type boom stops. They're designed to keep the boom from going over backward from causes other than the power of the machine. This means they won't stop the boom from going over backward if you don't disengage the boom-derricking-clutch or main-hoist-clutch. You'll have to disengage the master-or engine-clutch-lever if your boom continues to raise after you've disengaged the boom-hoist-clutch. This could happen if it's not adjusted properly. So, even if your rig is equipped with either type boom stop, play it safe. The stops are no substitutes for careful operation.



DRILL AND DRAIN

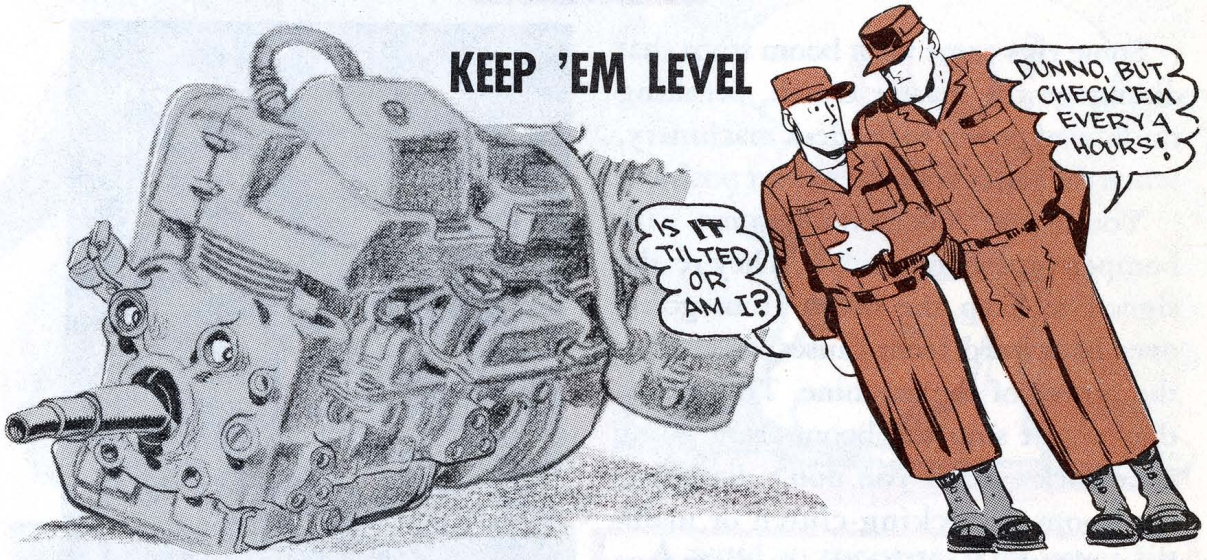


Has the exhaust pipe muffler outlet on your Shop Equipment Set No. 2, Couse Model MEDL, been rusting due to condensation and carbon?

A ¼-in. hole drilled at the lowest part of the outlet lets the moisture and rust scales drain out. Check the hole before each operation to make sure it's open and the outlet isn't clogged with rust.

If the outlet needs replacing, you can get a kit consisting of a corrosion resistant steel outlet and two clamps from the Engineer Maintenance Center. You can requistion the kit through regular Engineer repair parts supply channels under Manufacturer's Part Number 90805-12897-1.

KEEP 'EM LEVEL



On the level—that's the way you want to keep your Military Standard Engine Model 2A016-1 (3-HP) and 1A08-1 (1½-HP) knockin' off the revs.

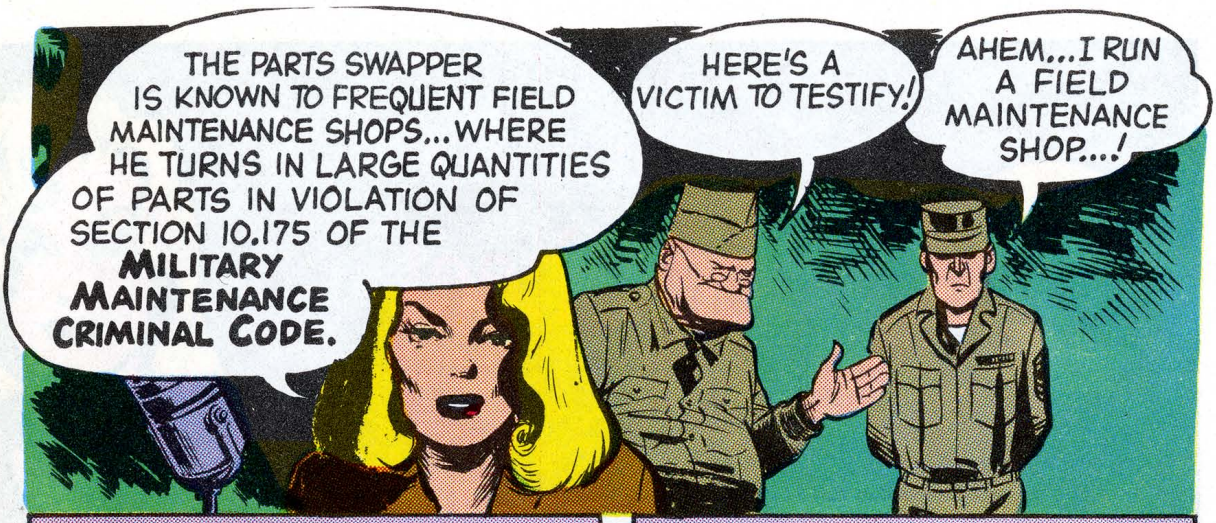
If the engine registers tilt, then all of the moving parts won't get lubed since the rig wasn't designed to be operated on an angle steeper than 15 degrees.

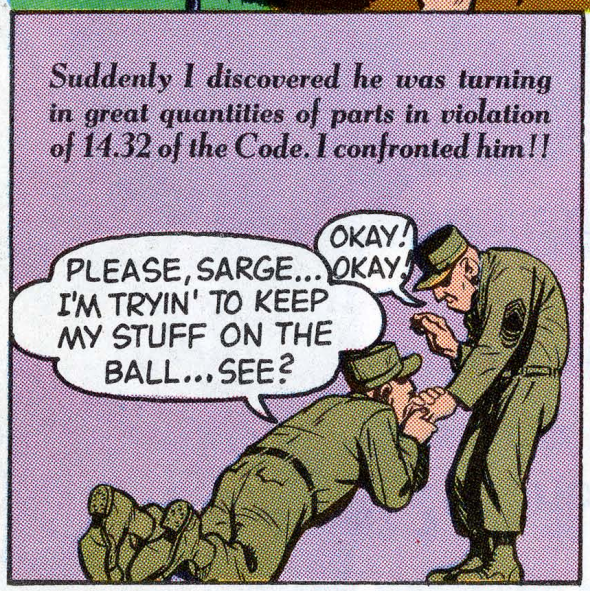
Check the oil on these engines at least every four hours during operation.. This powerful, little job sometimes uses oil real fast.

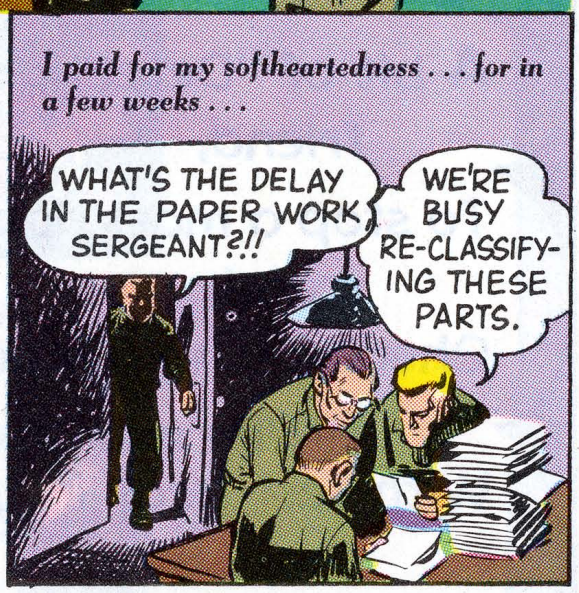
If the lube level goes too low or you run'er at too much an angle—you're in for trouble.

JOE'S DOPE
DANGEROUS
THE PARTS SWAPPER
DISTINGUISHING CHARACTERISTICS
MAINTENANCE
SHMAINTENANCE
TATOOED ON LEFT FOREARM
NO TEST EQUIPMENT ANYWHERE NEAR HIM, BUT MAY BE ARMED WITH STOLEN, BORROWED OR SALVAGED PARTS
CAN BE FOUND IN ALMOST ANY OUTFIT
ATTITUDE . . . STRICTLY INDIFFERENT. SUFFERS FROM "NEW PARTITIS" WITH A REPLACEMENT COMPLEX. LACK OF EQUIPMENT KNOW-HOW
MAKES IT DIFFICULT TO REASON WITH HIM
CALLING ALL REPAIRMEN: BE ON THE LOOKOUT FOR "THE PARTS SWAPPER!"
GIVE 'EM A RUNDOWN ON HOW TO SPOT HIM.

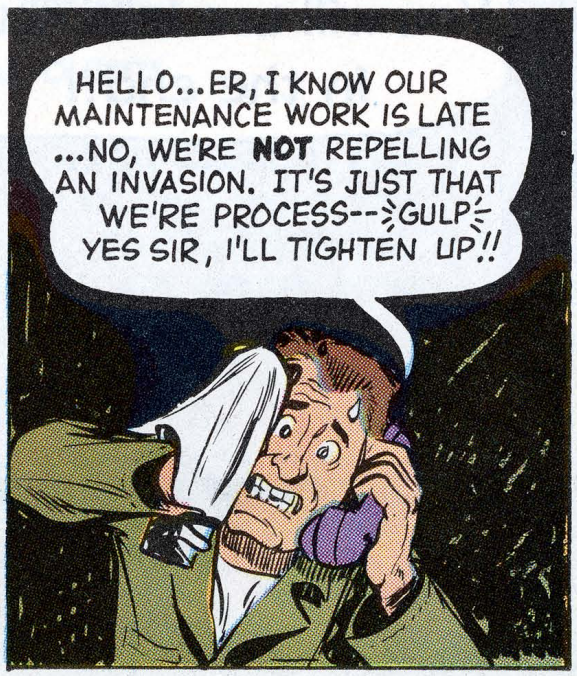
MODUS OPERANDI (M.O.)
Confirmed parts swapper . . . He replaces parts without checking out systems . . .
HEY, YOU SURE THESE ARE NO GOOD?
...ER...
M.O.
Never been known to use a spark plug cleaner and tester—portable battery charger—electronic multimeter—torque wrench—timing light—oscilloscope—low voltage circuit tester or gage of any sort.
PRETTY SURE...HERE, LOOK HOW DUSTY THEY ARE!!
PREVIOUS ATTEMPTS . . . one afternoon
HE WANTS TO SWAP A 2½ TON...
...OKAY...HE LOOKS HONEST ENOUGH...POOR GUY... SURE.
. . . and one hour later!
DID YOU PUT THAT 2½ INTO THE SHOP?
GULP
...WE'VE BEEN HAD!!...NOTHIN' WRONG WITH IT BUT A FLAT TIRE.
PREVIOUS ATTEMPTS #12A
. . . on another installation . . .
HEY...WHAT WAS THAT RUCKUS ABOUT?
!?+!! THINKS I'M A DOPE.
THAT GUY TRIED TO CON ME INTO TRADING A TRANSMITTER-RECEIVER SET...ALL THAT WAS WRONG WITH IT WAS THE TUNING KNOB PULLED OFF!!

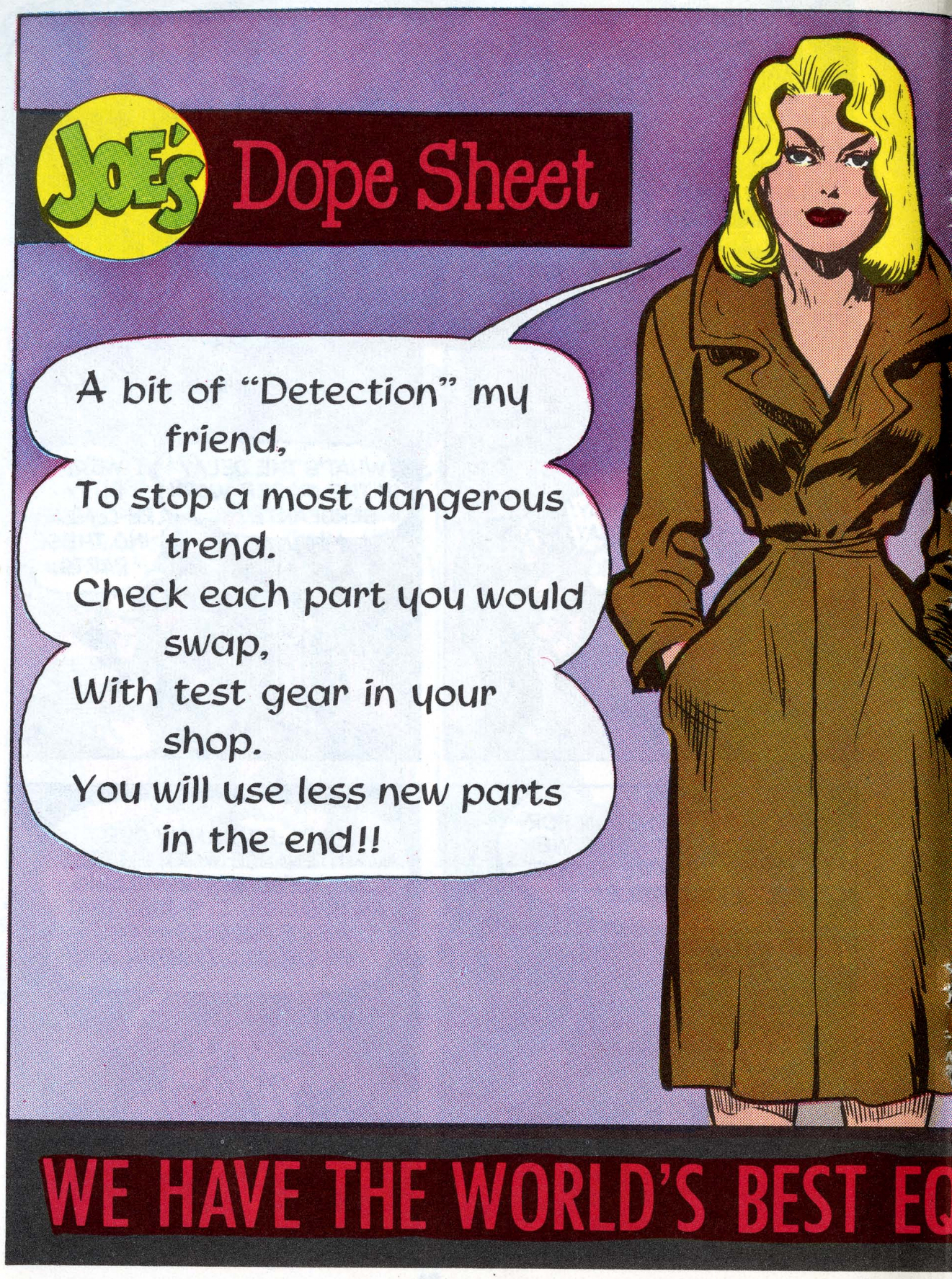

THE PARTS SWAPPER IS KNOWN TO FREQUENT FIELD MAINTENANCE SHOPS... WHERE HE TURNS IN LARGE QUANTITIES OF PARTS IN VIOLATION OF SECTION 10.175 OF THE MILITARY MAINTENANCE CRIMINAL CODE.
HERE'S A VICTIM TO TESTIFY!
AHEM... I RUN A FIELD MAINTENANCE SHOP...!


Suddenly I discovered he was turning in great quantities of parts in violation of 14.32 of the Code. I confronted him!!
PLEASE, SARGE... I'M TRYIN' TO KEEP MY STUFF ON THE BALL... SEE?
OKAY! OKAY!


I paid for my softheartedness . . . for in a few weeks . . .
WHAT'S THE DELAY IN THE PAPER WORK, SERGEANT?!!
WE'RE BUSY RE-CLASSIFY-ING THESE PARTS.

THEY WERE TURNED IN FOR REPLACEMENT– BUT WE DISCOVER THEY'RE ALMOST ALL SERVICEABLE!
RING RING


HELLO... ER, I KNOW OUR MAINTENANCE WORK IS LATE ...NO, WE'RE **NOT** REPELLING AN INVASION. IT'S JUST THAT WE'RE PROCESS--GULP YES SIR, I'LL TIGHTEN UP!!


JOE'S
Dope Sheet
A bit of "Detection" my friend,
To stop a most dangerous trend.
Check each part you would swap,
With test gear in your shop.
You will use less new parts in the end!!
WE HAVE THE WORLD'S BEST EQ

JOE'S Dope Sheet

A bit of "Detection" my friend,
To stop a most dangerous trend.
Check each part you would swap,
With test gear in your shop.
You will use less new parts in the end!!

REWARD!

STOP THIS SWAPPER

HABITS.. SWAPS PARTS LIKE MAD; NEVER TESTS.

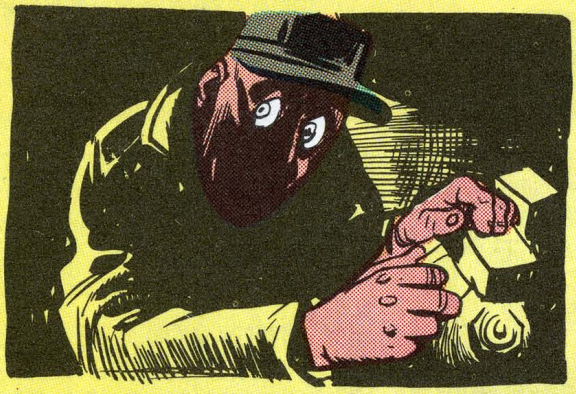
$ THOUSANDS $ CAN BE SAVED IN TIME AND EQUIPMENT IF HALTED:

LOOK FOR HIM IN ALL OUTFITS

CAUTION: DO NOT ATTEMPT TO APPREHEND UNAIDED. CALL YOUR NEAREST MAINTENANCE OFFICER OR NCO, WHO WILL REMOVE ALL DANGEROUS WEAPONS . . . SUCH AS WRENCHES, HAMMERS, PLIERS, DRILLS, DRIFTS, PULLERS, ETC. NOTIFY YOUR CLOSEST S-4 AGENT BEFORE INTERROGATING.

WE HAVE THE WORLD'S BEST EQUIPMENT . . . *Take care of it*

REWARD!



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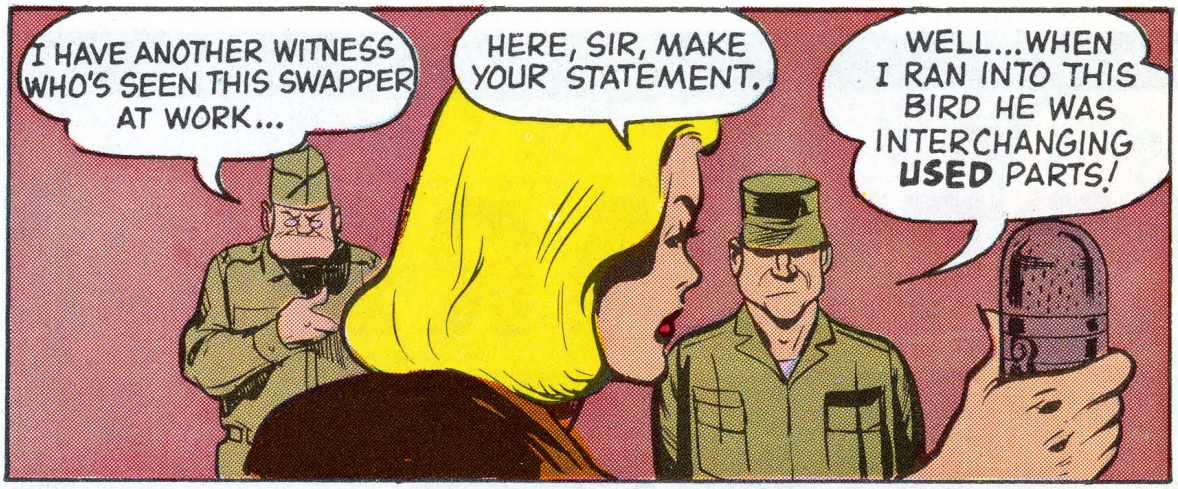
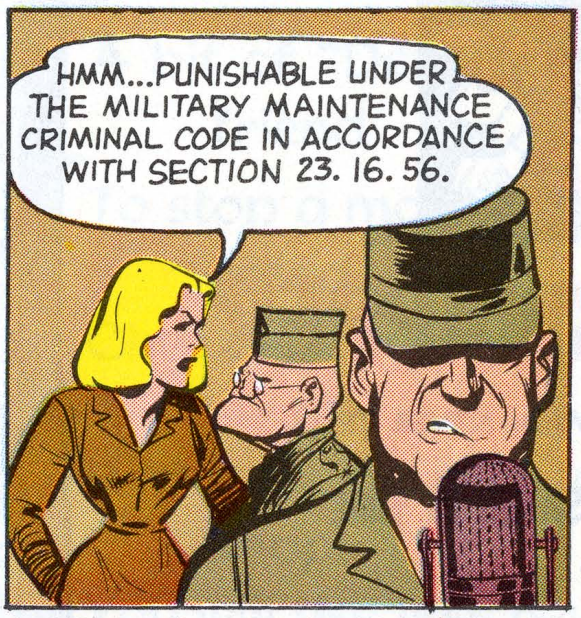
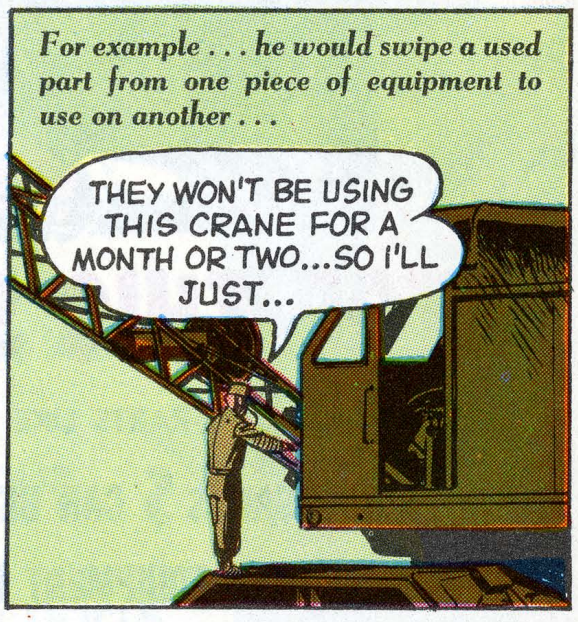
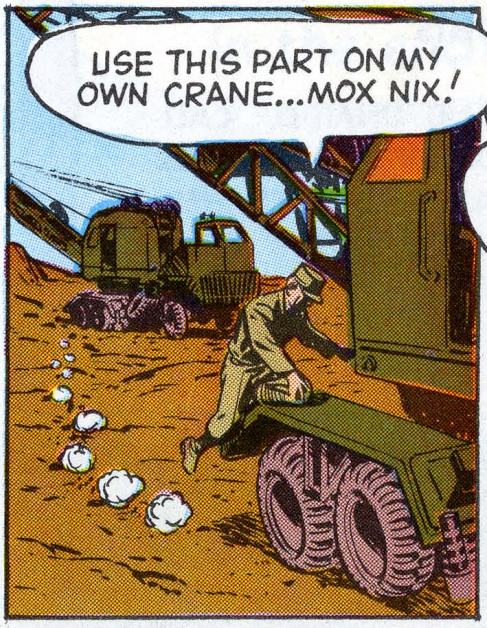
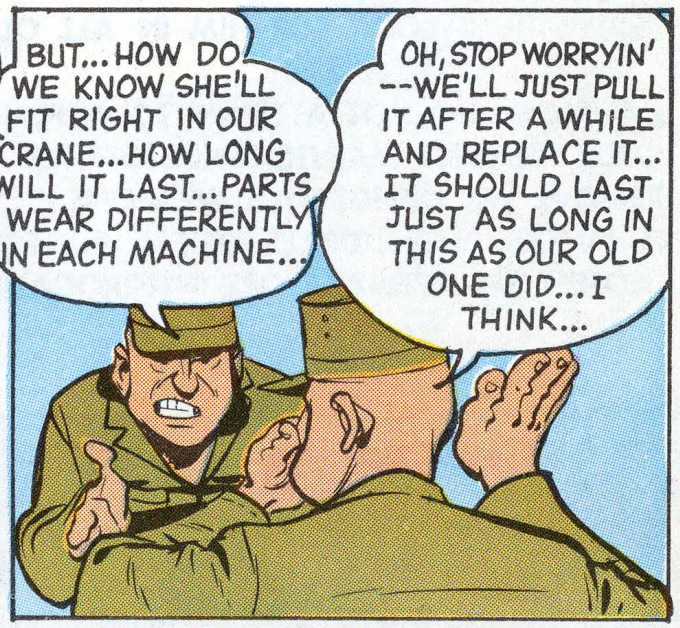
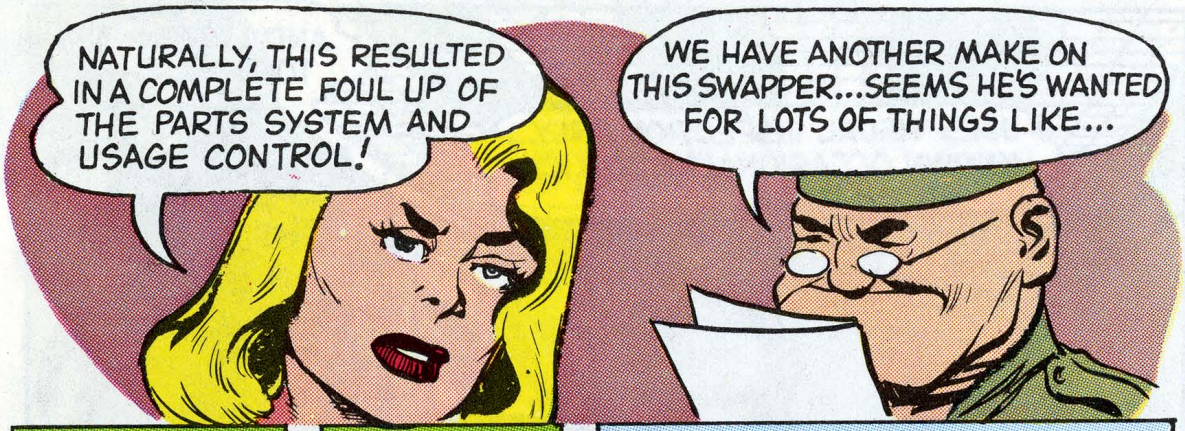

I HAVE ANOTHER WITNESS WHO'S SEEN THIS SWAPPER AT WORK...
HERE, SIR, MAKE YOUR STATEMENT.
WELL...WHEN I RAN INTO THIS BIRD HE WAS INTERCHANGING **USED** PARTS!

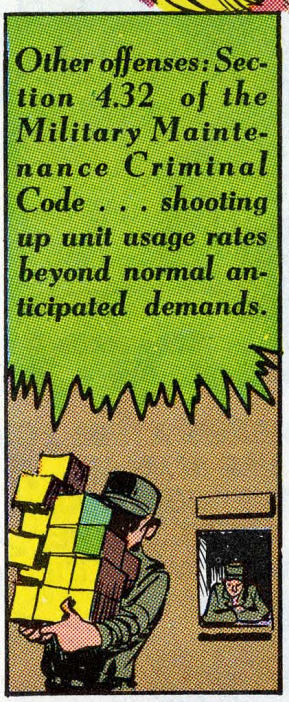

HMM...PUNISHABLE UNDER THE MILITARY MAINTENANCE CRIMINAL CODE IN ACCORDANCE WITH SECTION 23. 16. 56.

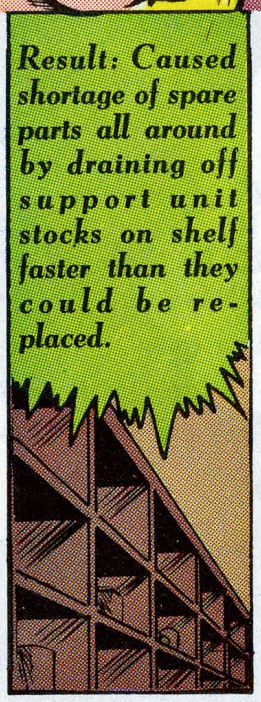

For example . . . he would swipe a used part from one piece of equipment to use on another . . .
THEY WON'T BE USING THIS CRANE FOR A MONTH OR TWO...SO I'LL JUST...

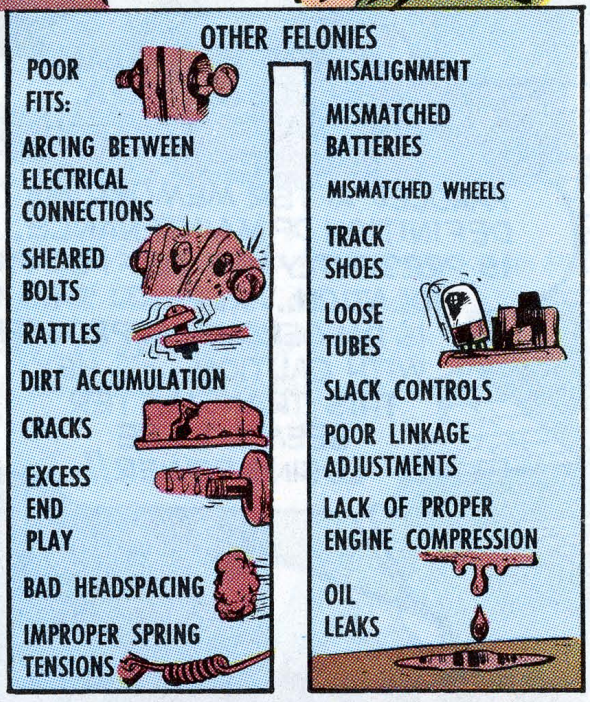

USE THIS PART ON MY OWN CRANE...MOX NIX!

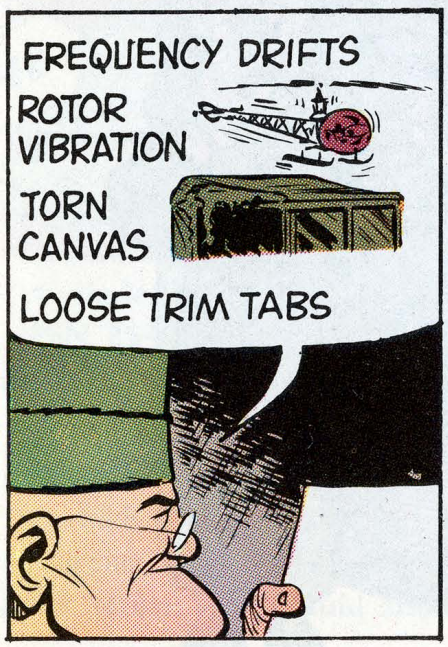

BUT... HOW DO WE KNOW SHE'LL FIT RIGHT IN OUR CRANE...HOW LONG WILL IT LAST...PARTS WEAR DIFFERENTLY IN EACH MACHINE...
OH, STOP WORRYIN' --WE'LL JUST PULL IT AFTER A WHILE AND REPLACE IT... IT SHOULD LAST JUST AS LONG IN THIS AS OUR OLD ONE DID... I THINK...


NATURALLY, THIS RESULTED IN A COMPLETE FOUL UP OF THE PARTS SYSTEM AND USAGE CONTROL!
WE HAVE ANOTHER MAKE ON THIS SWAPPER...SEEMS HE'S WANTED FOR LOTS OF THINGS LIKE...


Other offenses: Section 4.32 of the Military Maintenance Crimtnal Code . . . shooting up unit usage rates beyond normal anticipated demands.

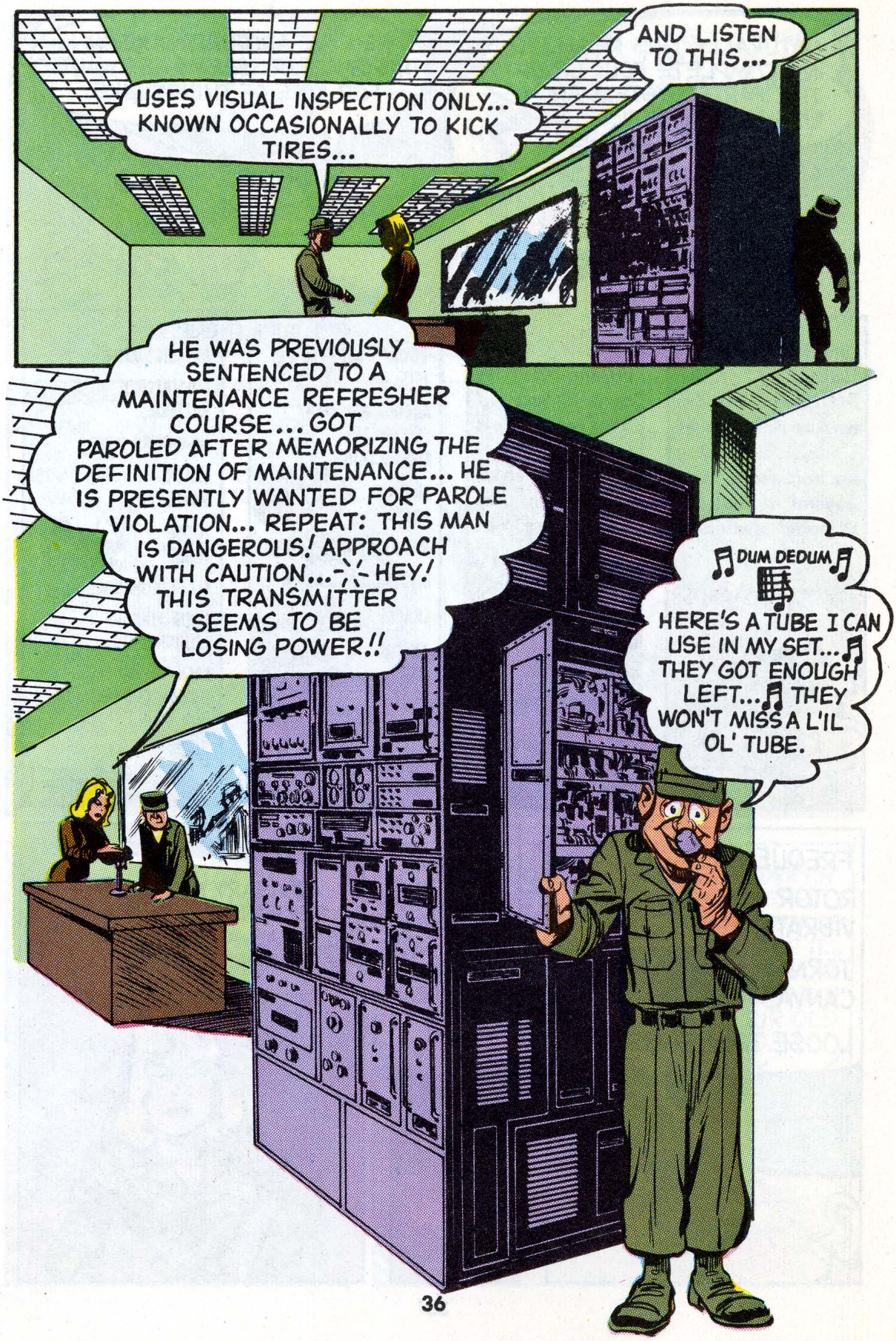

Result: Caused shortage of spare parts all around by draining off support unit stocks on shelf faster than they could be replaced.

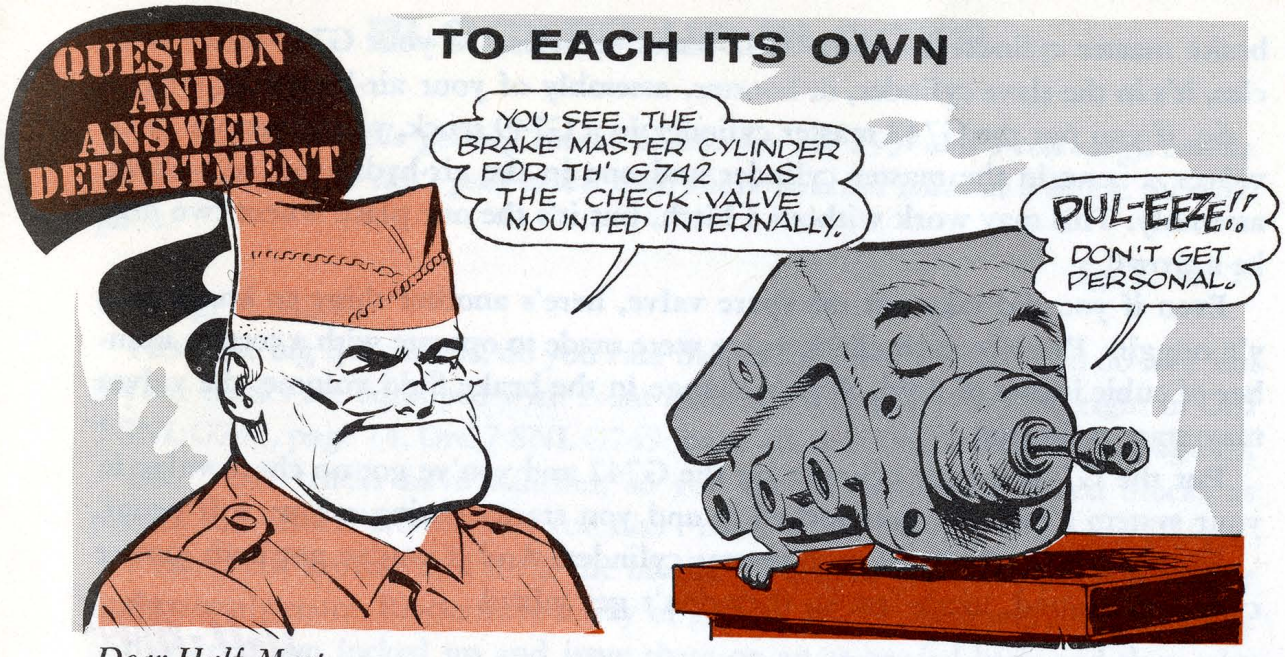

OTHER FELONIES
POOR FITS:
MISALIGNMENT
MISMATCHED BATTERIES
MISMATCHED WHEELS
ARCING BETWEEN ELECTRICAL CONNECTIONS
TRACK SHOES
SHEARED BOLTS
LOOSE TUBES
RATTLES
SLACK CONTROLS
DIRT ACCUMULATION
POOR LINKAGE ADJUSTMENTS
CRACKS
LACK OF PROPER ENGINE COMPRESSION
EXCESS END PLAY
OIL LEAKS
BAD HEADSPACING
IMPROPER SPRING TENSIONS


FREQUENCY DRIFTS
ROTOR VIBRATION
TORN CANVAS
LOOSE TRIM TABS

T-I-G-H-T B-O-O-T-S, C-H-A-F-E-D C-A-B-L-E-S, S-L-O-P-P-Y U-N-I-F-O-R-M-S, S-N-A-F-U-E-D K-P-A-T- -S-N-I-X...

ADVISARY NOTE TO S-4 PERSONNEL...THIS MAN HAS A RECORD OF CRIMINAL NEGLIGENCE!


AND LISTEN TO THIS...
USES VISUAL INSPECTION ONLY... KNOWN OCCASIONALLY TO KICK TIRES...
HE WAS PREVIOUSLY SENTENCED TO A MAINTENANCE REFRESHER COURSE... GOT PAROLED AFTER MEMORIZING THE DEFINITION OF MAINTENANCE... HE IS PRESENTLY WANTED FOR PAROLE VIOLATION... REPEAT: THIS MAN IS DANGEROUS! APPROACH WITH CAUTION... HEY! THIS TRANSMITTER SEEMS TO BE LOSING POWER!!
DUM DEDUM
HERE'S A TUBE I CAN USE IN MY SET... THEY GOT ENOUGH LEFT... THEY WON'T MISS A L'IL OL' TUBE.



Dear Half-Mast,

Brake master cylinders on the G742-series 2½-ton trucks look the same as the ones on the 2½-ton G749-series vehicles . . . at least, to me they look like twins, even though one's got a filler pipe and they've got different FSN's.

Is it OK to interchange 'em? And, if not, just what'll happen if you get the wrong one on a vehicle?

WO K. R. J.

Dear WO K. R. J.,

Switchin' those babies is apt to bring you more grief than going out on the town with your girlfriend's twin sister, Sir. Aside from the filler pipe extension, they do look alike. But you can't count on 'em to act the same way.

Cylinder, assy, hydraulic, master —FSN 2530-753-9267—goes with the G742-series.

Cylinder, assy, hydraulic brake, master—FSN 2530-741-0830—goes with the G749-series.

It's all because each brake system has its own location for the check valve . . . which keeps anywhere from 5 to 12 PSI pressure in the brake lines after the brakes are released. This fluid keeps air out of the system by preventing a quick return of the fluid and a suction effect. That check valve is inside your

brake master cylinder on your G742-series vehicles. On your G749-series vehicles, it's in the slave cylinder, or booster, assembly of your air-hydraulic system.

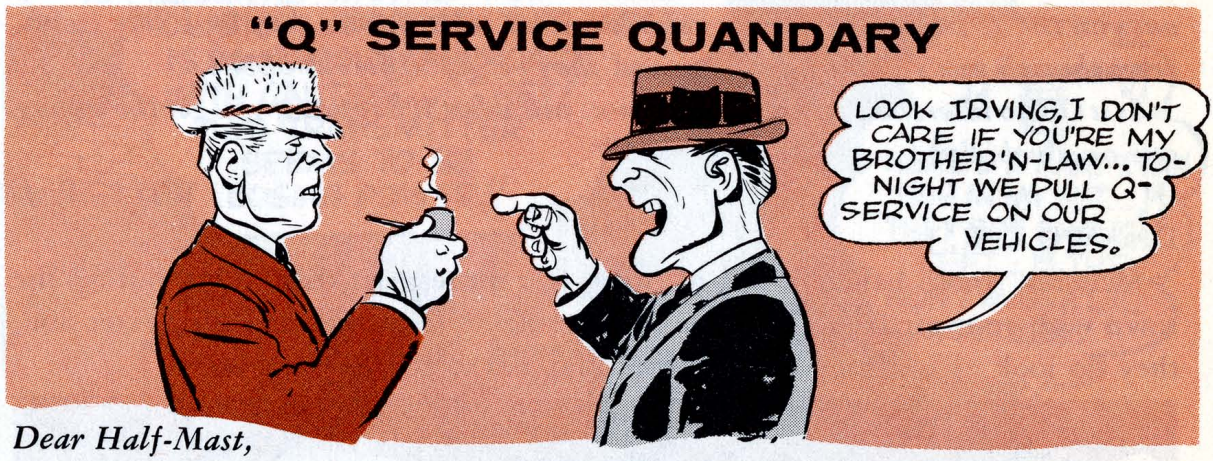
So, if you put the G742 master cylinder in a G749 truck, you have two check valves . . . one in the master cylinder and one in the air-hydraulic, or booster, assembly. This may work without a hitch, but it's the one place where two may be a crowd.

Even if you did take out the spare valve, here's another thing to knock into y'r noggin. Parts in each check valve were made to operate with a certain number of cubic inches of fluid. With a change in the brake fluid volume, the valves may start acting up.

Put the G749 master cylinder on the G742 and you've got no check valve in your system a'tall. Air gets sucked in and you start fighting a low, soft pedal.

So, give each vehicle its own master cylinder. And if you've got both master cylinders around, mark 'em so they don't get mixed.

Half-Mast



Dear Half-Mast,

Since a year's mileage on our vehicles is never very high, our Reserve unit does Q services by calendar dates. So, when the end of a quarter falls before or after our regular weekly drill date, is it OK to switch the Q service to our drill date?

Lt. J. G. B.

Dear Lt. J. G. B.

That's just a paper tiger you've got by the tail, Sir, and you should find an answer in your outfit's SOP. If you don't find it in the SOP, just follow para 18d of TM 9-2810 (4 Aug 59), which says a 10 percent variation in either time or mileage is permissable. That figures out to about 9 days fore and aft of the end of the calendar quarter . . . or a total of 18 days' leeway.

Make sure you keep track of the mileage, though, in case the miles pile up faster than you think.

Half-Mast

BLOCKED UP BLOCKS

Dear Half-Mast,

I'm having trouble getting snatch blocks for our 2½- and 5-ton cargo trucks. As you know, you can't pull much with those winches without a block. So what gives?

Sgt E. M. T.

Dear Sgt E. M. T.,

First, the big question is, do you rate blocks for those trucks? You do rate 'em if your trucks are equipped with front-mounted winches. It says so right in Ord 7 SNL G742, page 14, Ord 7 SNL G749, page 11, and Ord 7 SNL G744, page 19.

OK. Your trucks have winches, so you should have been issued blocks as part of the vehicle's OVE. But you don't have 'em?

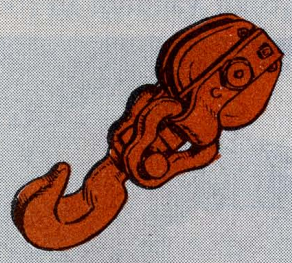
First, check around and see if the blocks have been stored somewhere — like in the supply room. Blocks have a way of getting lost or "disappearing," so some outfits keep 'em locked up and issue them on an as-needed basis and then take 'em back.

Now, if you still don't find those blocks, they have to be requisitioned. Your SNL is your authority, and the Transportation Corps is the tech service that's responsible for issuing them.

If your trucks don't have winches and you still want the snatch blocks, you'll have to get your CO to requisition them as items over and above your TOE allowances—just like it says in the TOE.

When you requisition blocks, use these new nomenclatures and stock numbers. If they're not available, TC will supply an equal substitute.

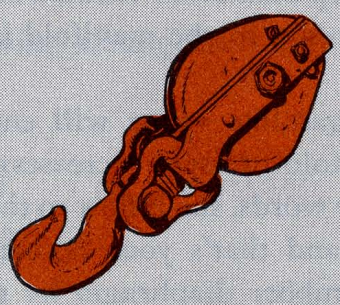
FOR THE G742 AND G749 2½-TON TRUCKS



FSN 3940-609-8026

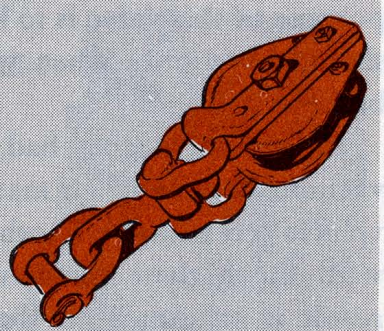
Block, tackle, wire rope, ½" max diameter, snatch, safety locking, steel shell, single 6¼" sheave, 10,000 lbs. safe working load (MIL-B-11837A, modification No. 5b, Type 11, Style A).

FOR THE G744 5-TON TRUCKS



FSN 3940-630-9932

Block, tackle, wire rope, ¾" max diameter, snatch, safety locking, steel shell, single 10" sheave, 30,000 lbs. safe working load (MIL-B-11837A, modification No. 7a, Type 11, Style A). (For M62 rear winch.)



FSN 3940-630-9931

Block, tackle, wire rope, ⅝" max diameter, snatch, safety locking, steel shell, single 8" sheave, 20,000 lbs. safe working load (MIL-B-11837A, Type 11, Style A). (For front winches only.)

AYE—THERE'S THE RUB

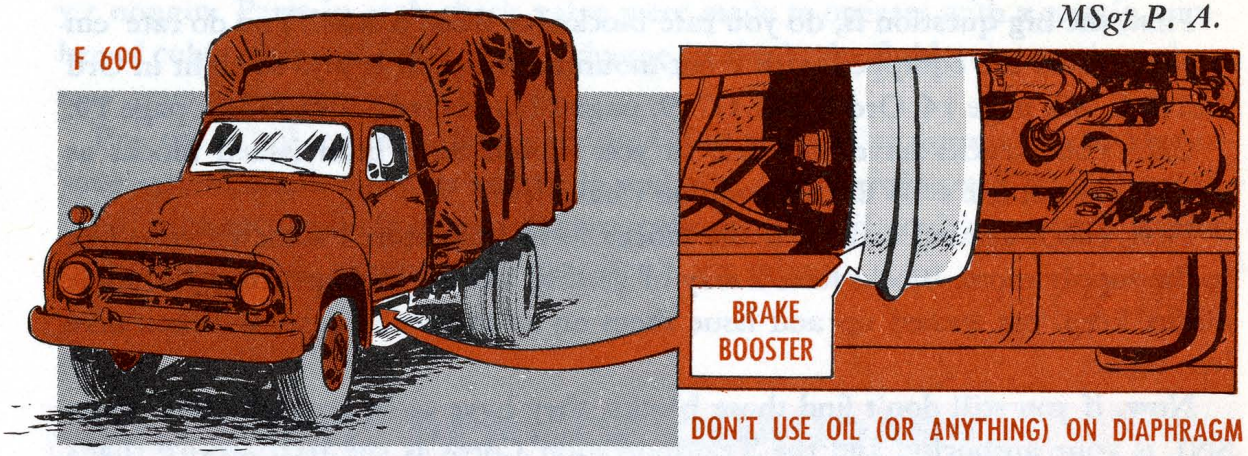
Dear Half-Mast,

How are you supposed to drive if your rubber's rotted? That's the problem we've hit with our Ford F600 truck.

We can't come—or go—because the rubber of our brake vacuum booster's diaphragm is shot. We've been maintaining like they said, too—lubing with OHA.

Where are we going wrong?

MSgt P. A.

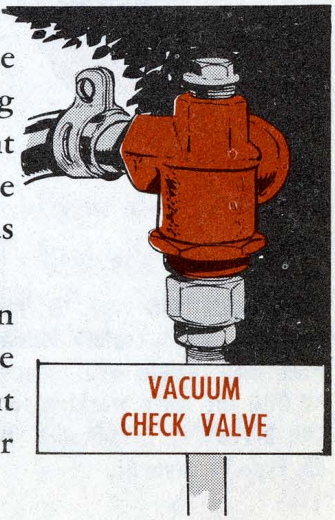


Dear MSgt P. A.,

I don't know who "they" are, but "they" sure have given you a bum steer. You're lubricating rubber with a juice that'll destroy rubber. That's just what petroleum-base oils, like OHA, do—they rot rubber.

Rule: If you're driving an F600—or any other vehicle that has a diaphragm in the booster—**don't use oil.** As a matter of fact, don't use anything, because she doesn't need lubricating.

Now, even if you don't use oil, it's still possible to get petrol into the booster and rot out your rubber. The cause of this is that little vacuum check valve. The purpose of this valve is to keep maximum vacuum in the system. This check valve should open only when vacuum in the manifold is higher than vacuum in the brake system.



If this valve goes bad, gasoline vapor will enter the vacuum booster when manifold pressure increases during vehicle acceleration. In other words, she'll flow to the point with the highest vacuum—and that's your booster. The result is an attack on the rubber diaphragm by the gas fumes—and a rotted rubber.

So, when you go to replace the ruptured diaphragm in your F600, give the booster a good cleaning to make sure no oil or gas is left there. Clean metal parts with solvent and dry 'em with air when necessary, but wash rubber parts with alcohol only.

Just as important . . . make sure the vacuum check valve floats freely without binding in the bore.

When you're assembling the brake, lube the hydraulic (slave) cylinder piston bore with a thin film of hydraulic fluid. But remember to use only HB—or HBA in arctic climates—like it says in TB Ord 2300-10/3 (12 Jun 58). HB and HBA are non-petroleum base fluids that won't rot rubber.

Hydraulic brake systems are "off limits" for petroleum base fluids, except where you have a **vacuum** cylinder of the piston-type hydrovac, mostly used with other vehicles. Even on this piston-type booster, which doesn't have a diaphragm, only the vacuum cylinder gets petroleum base fluid. You fill it to plug level every 20,000 miles or once a year with light oil (OE-10).

Half-Mast

TOWING ADVICE

Dear Half-Mast,

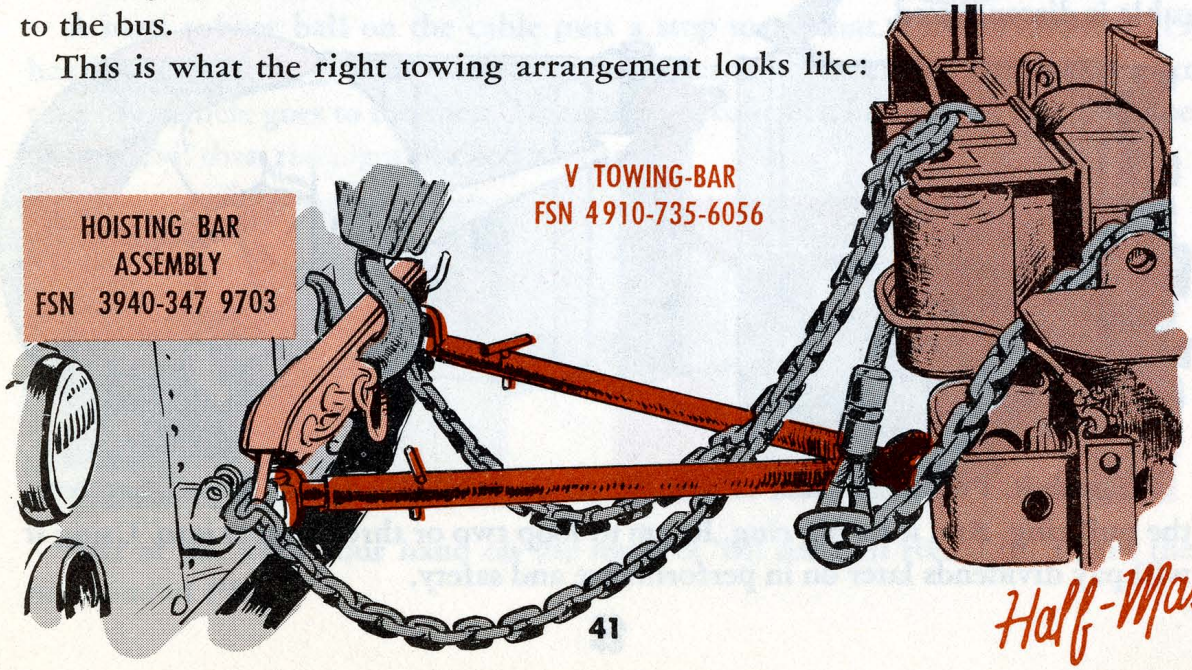
We're getting a shipment of Fageol and Brill busses soon. I've never handled these type busses before. How do you tow these vehicles? I want to be prepared —you know, like the Boy Scouts.

MSgt B. A. A.

Dear Sergeant B. A. A.,

When towing the Brill or Fageol bus with the M62 wrecker . . . the thing to remember is to be sure and use the V towing-bar, FSN 4910-735-6056, and the hoisting bar assembly, FSN 3940-347-9703. Both items are part of the wrecker's OVE. Trying to tow these busses any other way is just going to result in damage to the bus.

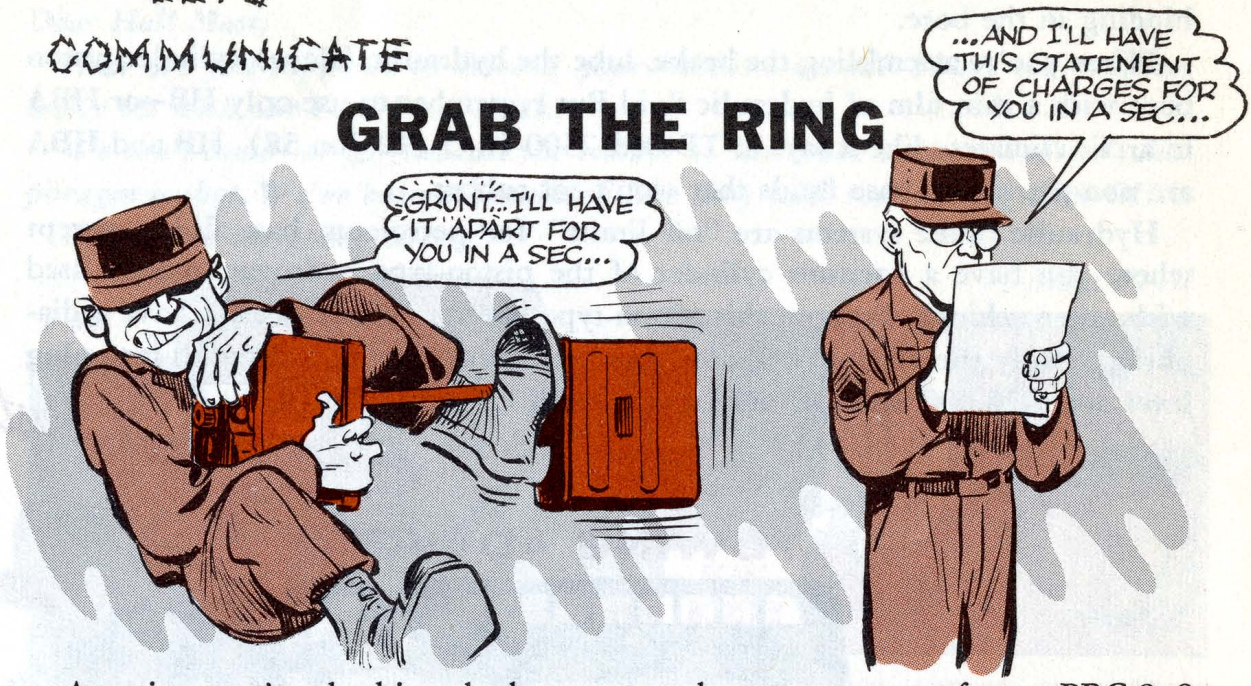
This is what the right towing arrangement looks like:



Half-Mast

LET'S COMMUNICATE

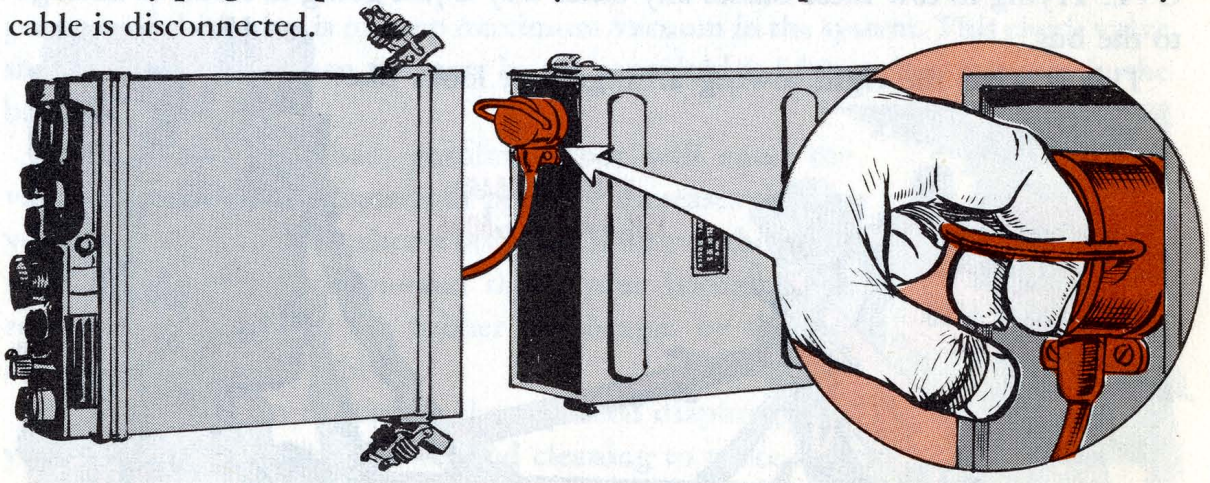
GRAB THE RING



Any time you're checking the battery or other components of your PRC-8, 9 and 10—use a touch of care when you separate the chassis from the battery and its case.

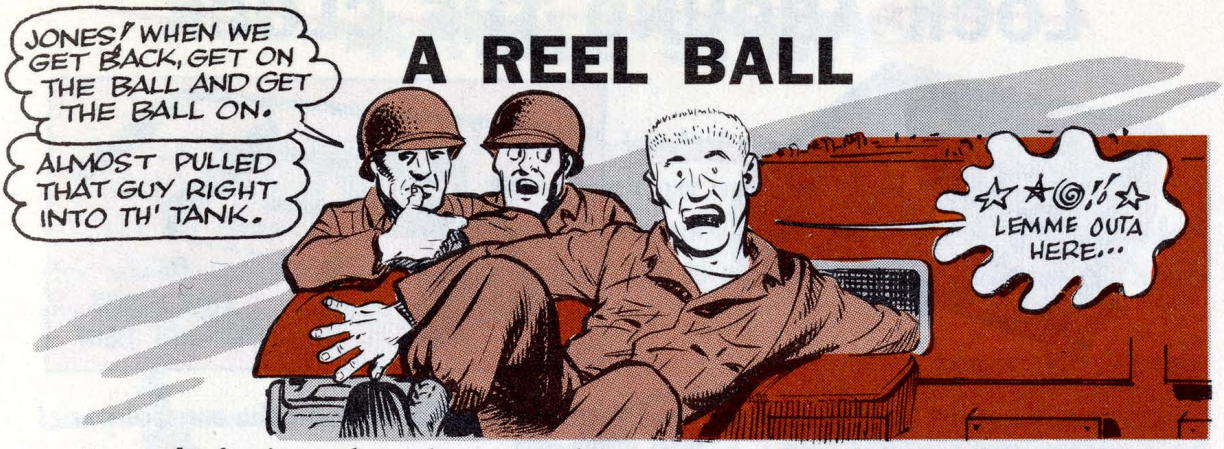
After the two clamps on the case are loosened, the only tie that binds the case and chassis together is the battery cable. And the stories are being told about some operators who grab the chassis in one hand—the battery case in the other—and PULL!

That separates things fast, but spells murder on plug and socket. It simply ruins the lifeline between battery and radio. The thing to pull, of course, is the ring on the battery plug. It's put there for only one reason—to pull whenever the battery cable is disconnected.



So grab it. Pull it. No risk of damage to anything as long as the pressure is on the pull ring. And it's a big ring. Room to loop two or three fingers into. Using it will pay dividends later on in performance and safety.

A REEL BALL



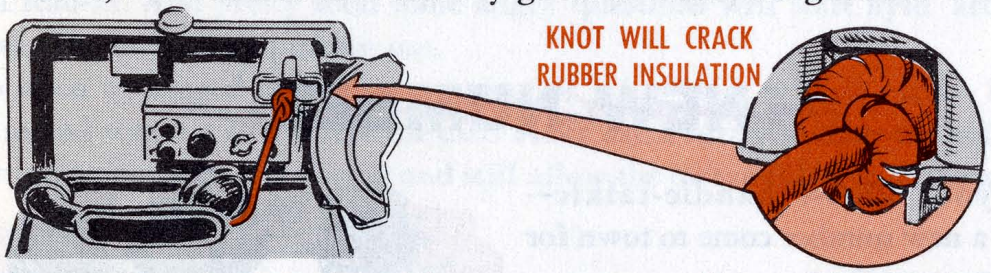
Instead of tying a knot in your cable, why not put a ball on the end of it!

That'll prevent damage when you're finished with your mission and go to snap it back into place.

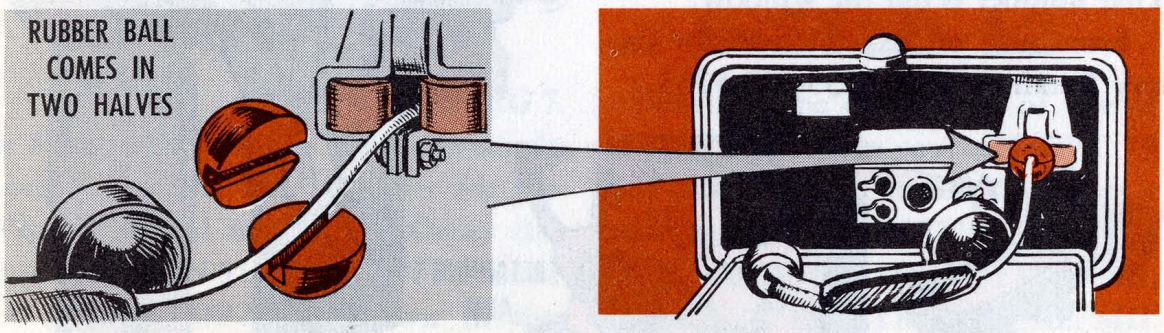
Because the cable-reel inside the external interphone box at the rear of your tank puts a mighty strong pull on the cable and the handset. So strong, actually, that a talker has to be careful he doesn't accidentally let go of the handset.

When and if that happens—or any time the handset is released—the whole works snaps back so fast that the plastic handset cracks up. Which means it's pretty much out of action.

Tying a knot in the cable a few inches from the handset will keep it from cracking its head, but won't do the cable any good. It wasn't designed for knot-tying.

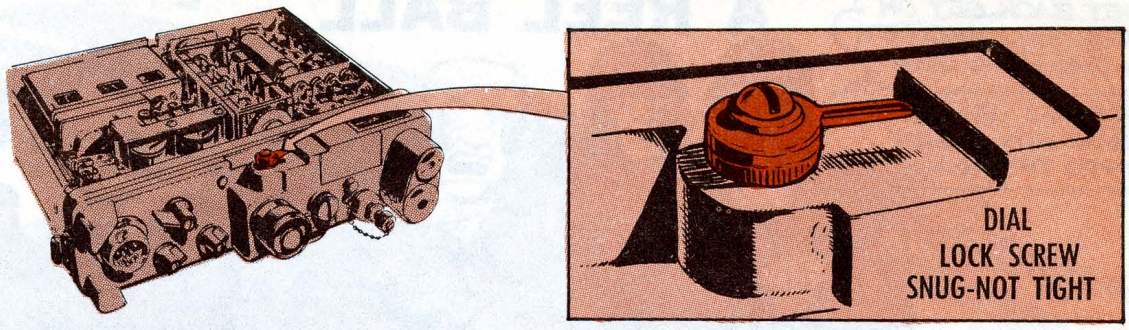


A hard rubber ball on the cable puts a stop to all that. FSN 3895-040-1719 hands you the ball. If your tank's external interphone lacks that ball, tag it next time the vehicle goes to the shop. Meantime, of course, a knot in the cable will be a lesser evil than risking a cracked handset.



Best of all, keep your hand on the handset 'till she's all reeled in. That's the best kind of PM.

LOCK AROUND THE CLOCK



Every time and all the time—day and night—that dial lock on the control panel of your AN/PRC-8, 9, or 10 is in action.

It's one of the most used and abused gadgets on the walkie-talkie. Used a lot because the dial lock keeps the dial set dead center where the operator wants it. Keeps the set from drifting off frequency.

Abused a lot because many an otherwise good operator forgets to release it when he grabs the tuning knob and starts tuning. This chews the gears inside your radio and also weakens the lock mechanism. That, of course, leads to drifting but quick.

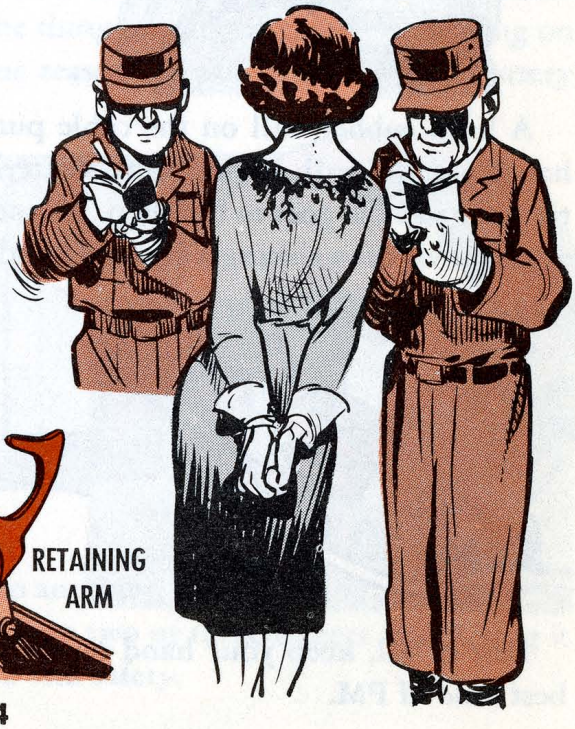
Check the screw holding the dial lock in place. It should be nice and snug. Not loose. Not squeakin' tight. And then exercise it to satisfy yourself everything is locking and unlocking smoothly.

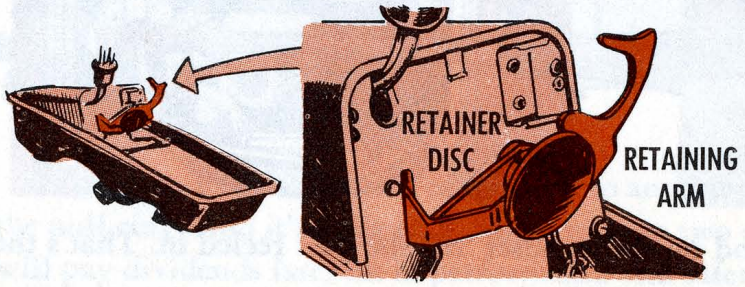
NEW NUMBER

On your PRC-6 handie-talkie—there's a new number come to town for the battery retainer.

No longer can it be requisitioned under FSN 6135-392-6606 like shown in Change 3 to SIG 7&8 dated 11 Oct 54. That number is out the window.

From now on, ask the man for Battery Retainer, FSN 6135-523-5733.



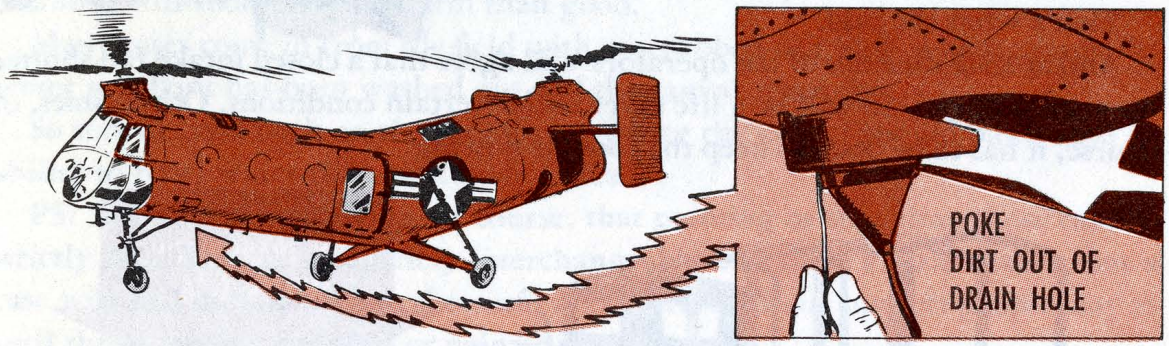


A HOLE STORY

A clogged hole usually leads to some kind of trouble.

Either something can't get in—or can't get out.

Take the Shawnee H-21 chopper, f'rinstance, with a drain hole on the underside of the fuselage up forward. That hole is drilled into the fitting that holds the antenna for the ARC/44 radio.



Trouble is, it gets clogged with this and that in no time at all, and then comes the trouble. Water starts to collect down there—especially when the aircraft is washed. Sometimes a pint or more will swirl around, unable to drain out.

No matter how little or how much, though, that water will short out the antenna lead-in. And pretty soon some angry questions will start flyin' around to see why the radio isn't putting out.

To open a clogged drain hole, a piece of safety wire will do nicely. Put the wire in and rotate it so's to free the dirt. Make extra sure you clear the hole without injuring any internal wiring and still allow the dirt to fall free of the aircraft.

PUB FLUB

Oops. It's one number off. The SIG 7 & 8 for your AN/PRC-21 radio set. It lists the federal stock number for the alignment tool incorrectly. Order the tool under FSN 5120-561-**0977** instead of 5120-561-**0976** as shown in the publication.

6 STED 12

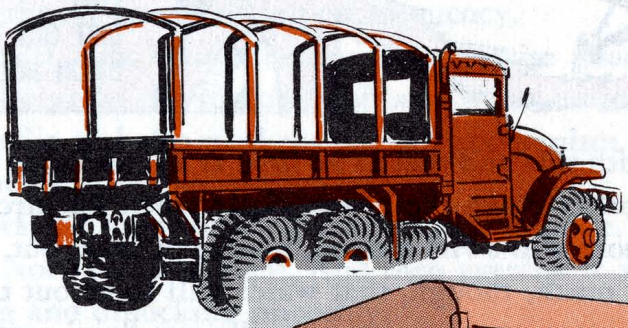
Somehow the description of one of the electron tubes in your AN/GRC-19 got flubbed a bit. The SIG 7 & 8 lists it this way: ELECTRON TUBE: MIL type **12**AK6 (FSN 5960-188-3551). Instead, it should be: ELECTRON TUBE: MIL type **6**AK6 (FSN 5960-188-3551). Everything else is OK.

SHUTTER UP

Quick, quick, close the shutters!

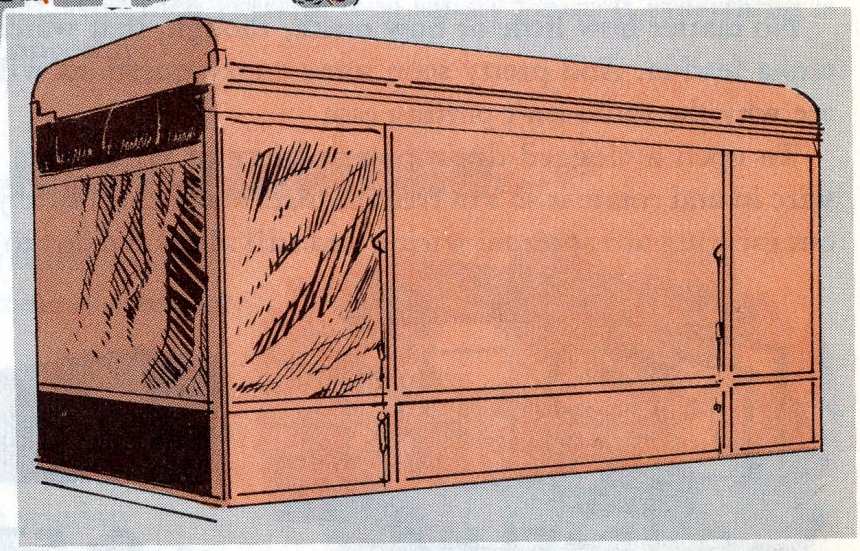
That's what she said.

And at least nine out of ten operators will agree that a closed intake fan shutter on your Shelter S-56 will be a life saver under certain conditions. Other times, of course, it has to be open to keep the cool air flowing.



WHEN TRANSPORTING SHELTER S-56...

...ABOARD M-211 CARGO TRUCK— KEEP SHUTTER SHUT TIGHT



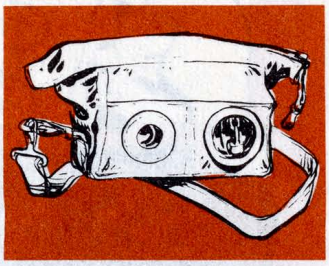
But there is one time when that shutter has to be kept shut tight. That's whenever anyone's running a test of the AN/GRC-41 radio set when it's being transported from here to there aboard an M-211 cargo truck.

You guessed it right.

The fumes from the vehicle exhaust stack just naturally wander through the shutter and into the shelter. Which could mean maybe a fatal case of carbon monoxide poisoning for the crew inside the shelter.

Until a permanent cure is set up to deflect those fumes, the closed shutter policy will keep them out during testing operations while the M-211 is rolling.

A BAD RUB



Soap and water are fine. Free. Usually lots of 'em around.

But it can be overdone—in at least one case.

And that case is the CY-1277 used with the TA-43 and TA-312 field telephones. The canvas, of course, is water repellant. Trouble is, excessive washing, scrubbing and cleaning will soon do more harm than good.

Many cases come in from the field with a scrubbed out look which means the water repellant has been washed out and the canvas worn thin.

So sort of hold back on the scrub jobs. Better the canvas should hang onto its ability to repel water than be scrubbed clean.

PS: It goes without saying, of course, that painting or stenciling those cases is strictly NG. They're completely interchangeable and there's little chance that a case will find its way back to the outfit it came from. Your support people may as well throw away a stenciled or painted case.

NO SMALL CRACK

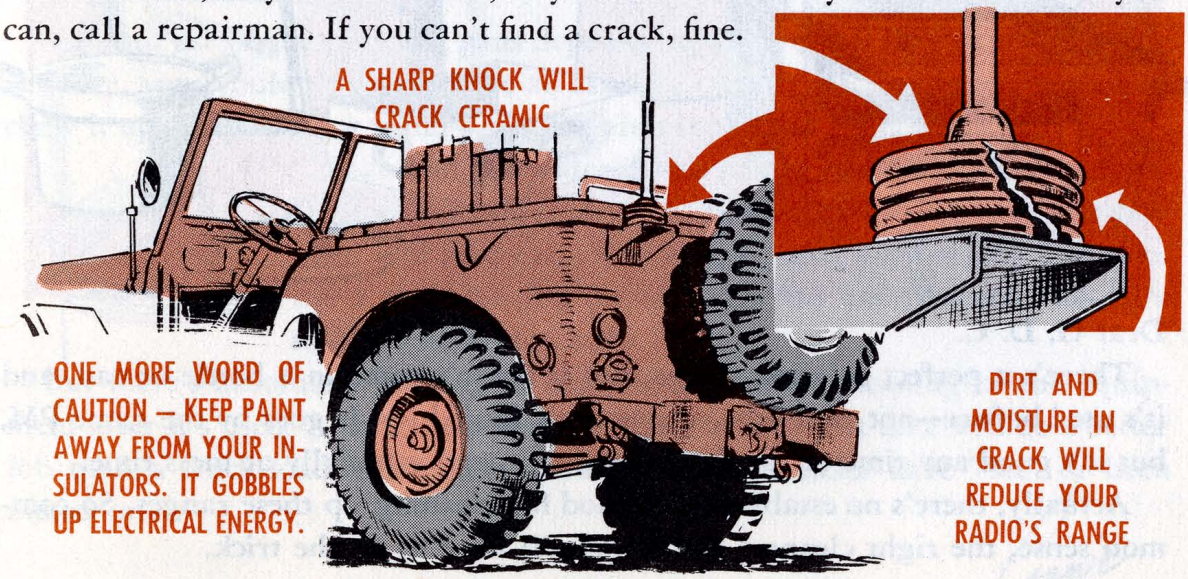
Got a little crack?

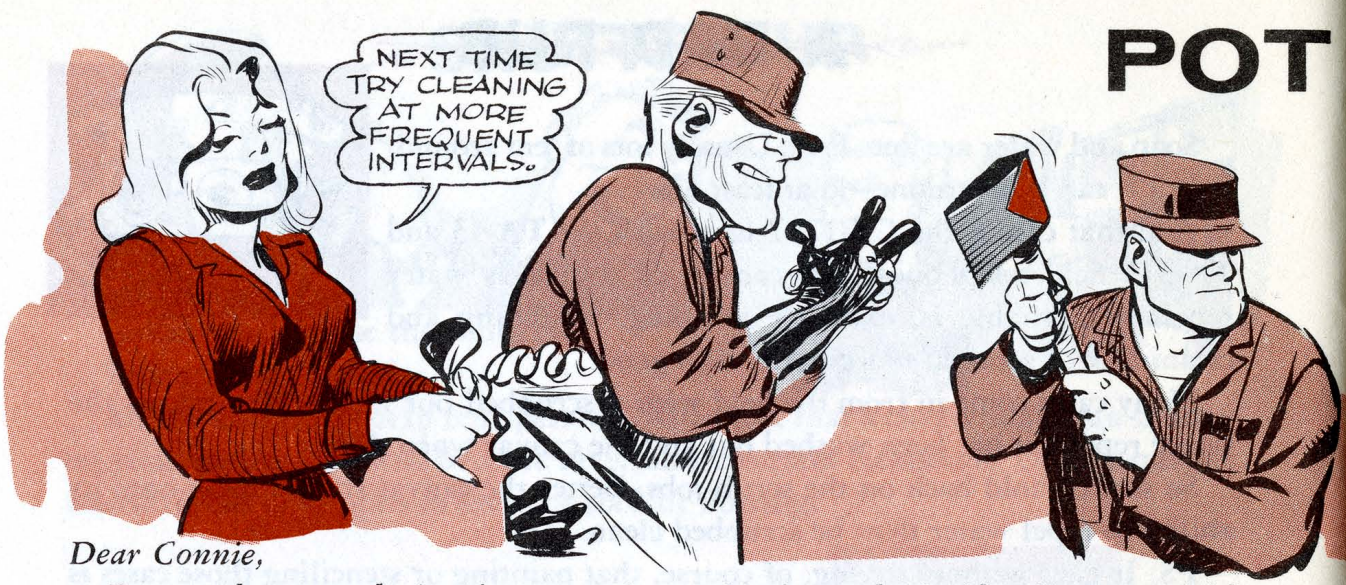
It could lead to trouble, depending on where it is.

Like in the antenna insulator for any vehicle mounted radio set—AN/GRC-3; AN/GRC-19, AN/VRC-10; or what have you. They're ceramic—and a sharp knock can crack 'em like crockery. Which opens the way for moisture and dirt. Mostly moisture.

Any trace of that stuff in the body of any insulator drains energy from the set and reduces range sharply. Has a reducing effect on the distance a signal will carry.

Look twice, maybe three times, at your insulators. Try to find a crack. If you can, call a repairman. If you can't find a crack, fine.

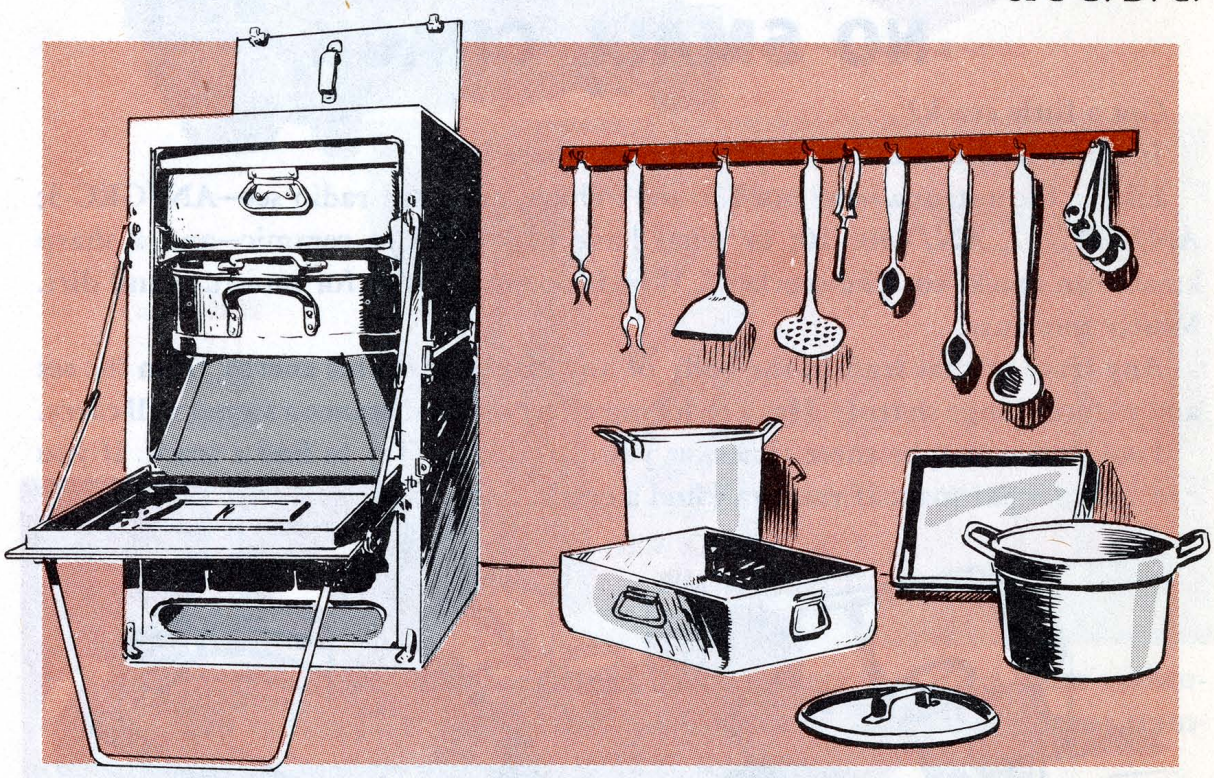




Dear Connie,

Do you have a solution for removing stains from the inside of M1937 field range cabinets and for cleaning burned food particles from the square head pans and other pots that go with these ranges?

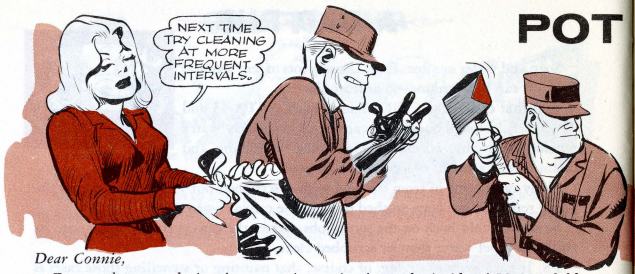
SFC G. D. C.



Dear G. D. C.

There's a perfect solution, Sarge, but it doesn't come in a bottle or can, and it's used **before**—not after—the equipment's fouled up. It goes by the name PM, but it's good any time of the day or night . . . and especially at mess time.

Actually, there's no established method for cleaning up these ranges. So common sense, the right cleaners and muscles'll have to do the trick.



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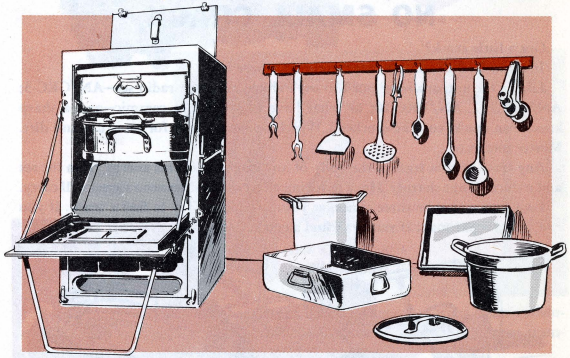

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POT WALLOPING

Tackle the oven first. Scrape off all the stuff that'll budge with a spatula or other sharp instrument.

After that comes the rub . . . rub . . . rub . . . with scouring powder and stainless steel wool . . . till you get the range spit-and-polish clean.

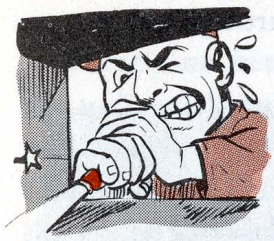
What to use on the pots and pans depends on what metals they're made of. For instance, you wouldn't want to use an alkaline cleaner on aluminum ware. It'll chew it up. Soap and hot water's best for aluminum and chrome.

Soap and hot water'll also do for cast iron and sheet iron. On stainless steel pots and pans, vinegar and salt and/or lemon juice will take care of ordinary gook, but for real bad cases use a fine scouring powder. For tin utensils, heat 'em in a solution of baking soda.

But there's absolutely nothing to beat the immediate cleaning of the equipment after it's used. A little soap and hot water at the right time will do a better job than a truck-load of cleaners after the food particles have "set" or been baked in.

Connie

WALLOPING



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Connie

STORING MATTRESSES

Dear Half-Mast,

The size of our outfit changes a lot from time to time due to training programs. This leaves us with a bunch of bed mattresses to be stored temporarily.

Can you clue me how they should be stacked to prevent mildew, rot, soaking with moisture, etc.? We're especially worried the top ones will squeeze the bottom ones out of shape.

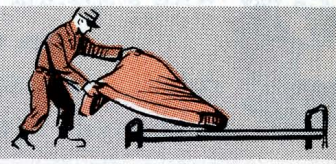
Another thing, Sarge, what is the minimum size a mattress can be and still be fit for use?

Capt A. B. M.

Dear Captain A. B. M.,

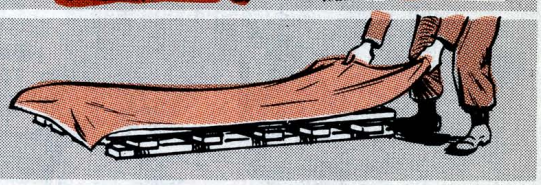
The way they're stacked determines how they'll feel under you—lumpy or skinny, or like they should . . . soft and fluffy and sweet-smelling. If they've been piled right and aired and kept dry, mattresses will come through any storage period in fine shape.

1. Remove the mattresses from the beds. (Moisture on the bed springs could leave rust marks on the mattress.) Make sure they're dry.



2. Set aside those needing cleaning or repairing—don't stack 'em with the rest.

3. Get hold of some dunnage (2x4's would be fine) and build a platform at least 4 inches from the floor. Cover this with heavy fiberboard, cardboard or water proof paper.



4. Stack the mattresses one on top of the other **no more than 9 mattresses deep.** On top of the whole stack drape a dustproof cloth or polyethylene sheet.

I can't repeat often enough how dry the mattresses must be before and during storage. This means the barracks or supply room has to be waterproof, clean and closed tight in wet weather. And it should be aired frequently when the weather's dry and clear. If a mattress gets wet, say from a leak in the roof, remove it from the stack pronto and dry it out thoroughly.

The minimum thickness of a mattress is 3 inches. It should be at least 29 inches wide and 72 inches long.

In general, though, a mattress will do as long as it's comfortable and won't hurt a guy's health. In other words, it's OK as long as it gives enough bounce to the ounce.

Half-Mast

There's no need to get into a flap about where to put the unit mark on your protective mask carrier. You don't put it—that's right—you don't mark your carrier in any way. Change 2 to AR 746-10 said to put your unit marking inside the cover flap, but Change 3 (8 Dec 58) does away with that. So, no more marks of any kind.

Maybe some of you have found that it's easy to put ID marks on the outside of your carrier with paint, crayon or indelible pencil. Keep those away from your carrier because it's almost impossible to get rid of these marks when the carrier's cleaned for reissue. You're also flirting with a gig come inspection time.

It's fairly easy to keep your carrier in good condition by following a few simple rules. Shake as much dirt off the carrier as you can. Then dunk it up and down in a pail of warm soapy water. (You may think scrubbing with a brush will do a better job but it might damage the material). If there're still spots on your carrier after you've dunked it good, then scrub the spots with a white rag (or a rag that won't fade on your carrier), and soapy water.

Rinse with clear water, making sure you get rid of all the soap. Then stretch your carrier back to its original shape before it dries. It should be dried in the shade or indoors because the sun will cause it to fade.

Here are some things to steer clear of—chlorine bleaches, yellow issue soap, cleaning fluids (carbon tet, etc.), and dyes.

SHAKE OUT DIRT...

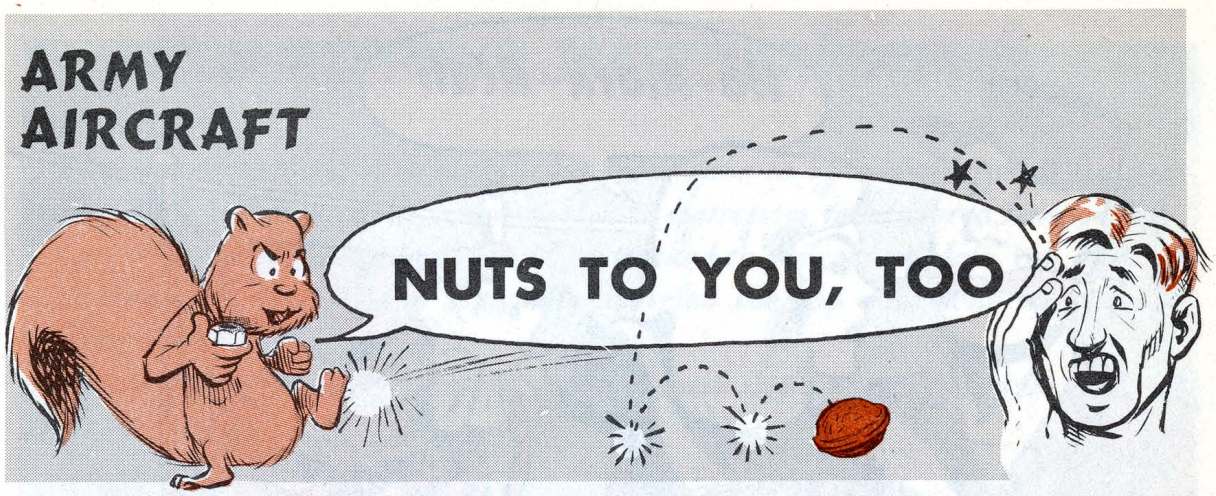
DUNK IN WARM SOAPY WATER

SCRUB SPOTS WITH WHITE RAG

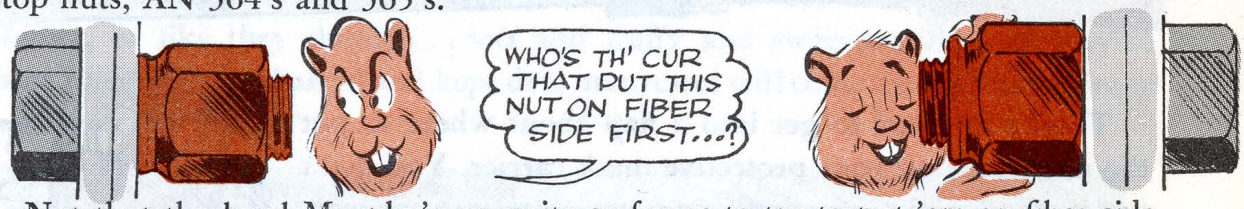
RINSE IN CLEAR WATER...

STRETCH INTO ORIGINAL SHAPE...

AND DRY IT IN THE SHADE.

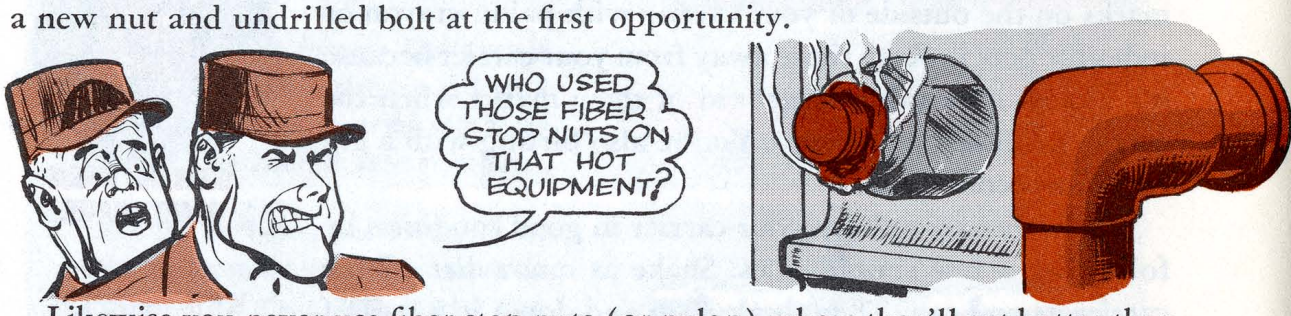


Y'wouldn't think it, but some people are still having trouble with the elastic stop nuts, AN 364's and 365's.

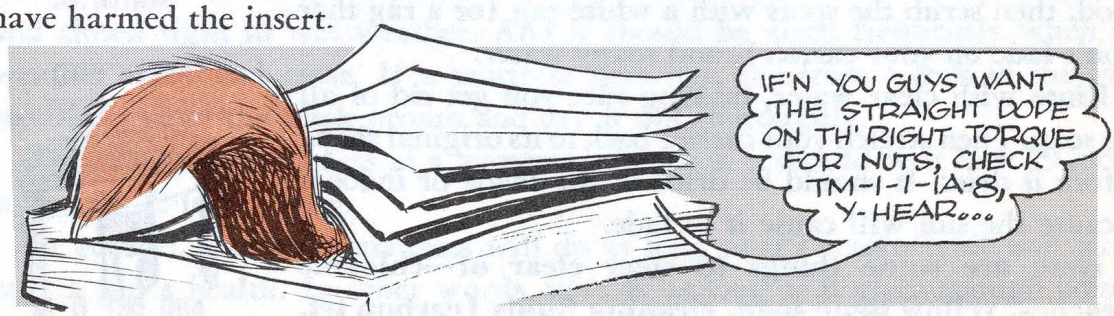


Not that the local Murphy's go quite so far as to try to put 'em on fiber side first, but they do sorta forget the rules and precautions like TM 1-1-1A-8 tells 'em.

Like you can use elastic stop nuts with bolts, studs or screws which have cotter-pin holes if they are 5/16-in or larger, and if the cotter-pin holes are not burred. Under 5/16-in, you only use 'em on drilled bolts in an emergency, and replace with a new nut and undrilled bolt at the first opportunity.



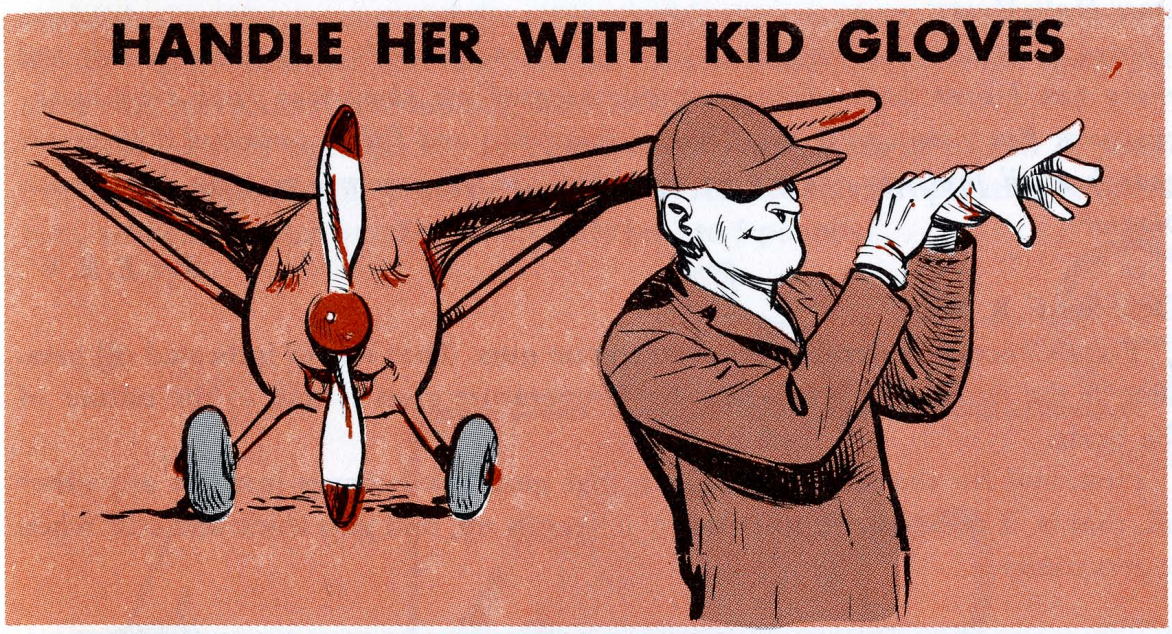
Likewise you never use fiber stop nuts (or nylon) where they'll get hotter than 250° F. And of course you always think twice before re-using an elastic stop nut. If the fiber insert is not brittle, and has not lost its locking friction, it can be re-used. However replated nuts are not re-used because the plating solution may have harmed the insert.



On nuts 3/8-in and smaller, you can use the "finger-tight" check to see if they're

fit to use again. If you can continue to run 'em down with your fingers after the bolt enters the fiber locking ring, they're too loose—replace 'em. For those ½-in and over, see the table on page 78 of TM 1-1-1A-8 for the minimum torque values for acceptable nuts.

Remember that AN310 castle nuts and cotter pins may be used instead of AN365 nuts, and AN320's and cotter pins double for AN 364's if you can't get the self-lockers.



Of course, everybody knows that. But how about that other temperamental lady, the aircraft you fly?

It'll pay you to wear light flying gloves any time you're in the air. First of all, they'll cushion the vibration some, so you'll have a little less of that stingy tingling in your hands when you land. Then, they'll give you a little better grip in hot weather, when your hands tend to be moist. And while you aren't in danger of losing any canopies in sub zero air, still gloves are nice to have around in cold weather, and can be worth their weight in gold if you should have to bail out and walk back in a cold area.

But perhaps the best reason for wearing gloves is the one that everyone hopes he'll never meet—fire. A pair of thin gloves will protect your hands for a short while even in a gasoline fire. And it may well be just that short while that it takes you to get out of the aircraft.

In a recent crash, the pilot suffered only minor burns on his face, but received third degree burns on his hands. It seems unlikely that he'll ever fly again. A pair of gloves might very well have saved his career.

So you'll be wearing yours, won't you?

CHOCTAW (H-34) OIL

Dear Half-Mast,

Look, I've been working around engines and aircraft since I was a kid, and every one I ever saw, when your oil warmed up, there was some drop in the pressure. But comes now my Choctaw chopper, and I'll be switched if the main gear box oil pressure doesn't go **up** *when the temperature goes up. Howcome, please?*

Sgt. E. R. W.

Dear Sgt E. R. W.,

Your Choctaw instruments haven't gone nuts. That rise in indicated oil pressure at the main gear box when the temperature rises is due to the nature of the beast.

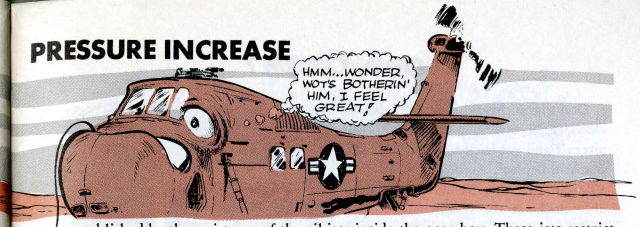
First, and for the record, the oil in that gear box behaves just like any other oil, that is, it gets some thinner when it warms up, and gets thick and stiff when it gets colder.

But, here's the pitch: The oil comes outta the bottom of your ❶ gear box to the ❷ oil pump, right? And like most oil pumps, this one has a ❸ pressure relief valve that by-passes any excess pressure back into the gear box, OK? Now, **between** the oil pump and the ❹ oil pressure gage pick-up point are the ❺ oil lines and the oil cooler, which are naturally full of stiff cold oil when you start. The cooler is a series of small passages anyway, through which the oil has to pass, either through the ❻ thermostatic by-pass until it reaches 160°F, or through the cooling tubes after that. Then it goes to the ❹ pressure gage pick-up point, and then to the ❼ oil jets inside the gear box.

So, your oil always leaves the oil pump at not more than the relief valve setting. When cold, it moves sorta slowly and sluggishly through the oil lines and oil cooler passages, and since it takes pressure to force it through these lines, it arrives at the oil pressure pick up point at less than pump output pressure. Just as an electric current has a voltage drop when it passes through a resistor, your oil flow has a pressure drop when it passes through the resistance of the oil lines and cooler.

Then, as your oil warms up and becomes thinner, it moves through these lines with greater ease, and there is less pressure drop, so the oil arrives at the pressure gage pick-up point at a higher and higher pressure until it reaches the pressure

CHOCTAW (H-34) OIL PRESSURE INCREASE



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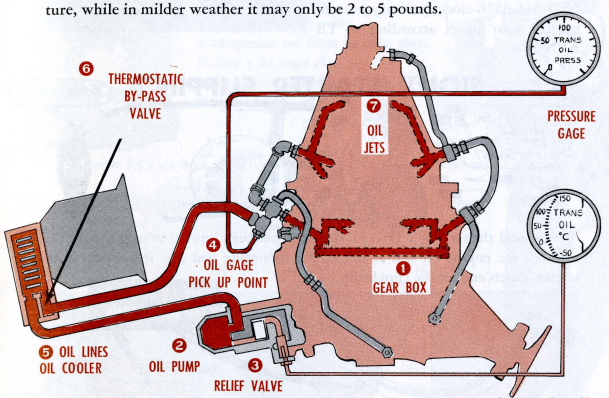
established by the resistance of the oil jets inside the gear box. These jets restrict the flow of oil into the gear box, and at the same time establish the spray patterns that lubricate all the moving parts in the box.

OK, so in cold weather, say 10°F, you may have as much as a 15 to 20 pound increase in indicated oil pressure until the oil reaches normal operating temperature, while in milder weather it may only be 2 to 5 pounds.

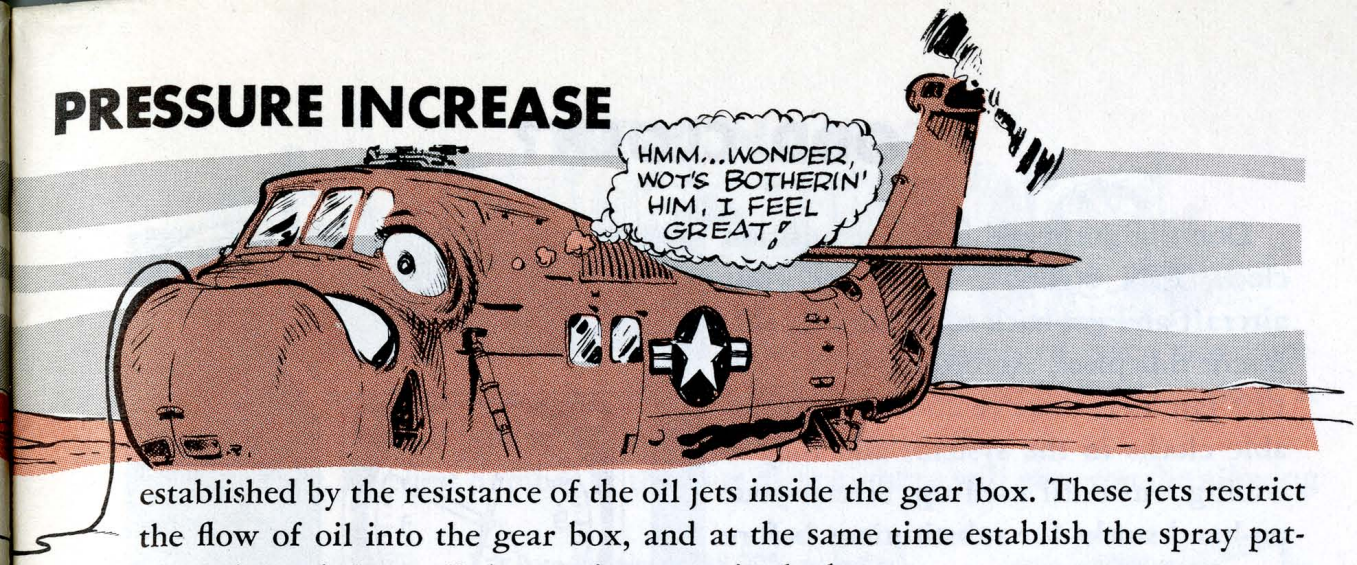


But, here's the point to the whole thing: You are not concerned with the oil pressure at the oil pump output—it isn't doing you any good there. What you want to know is that there is enough oil coming into the spray jets to adequately lubricate your moving parts. And that's why the gage line is connected where it is. ***All the oil pressure in the world won't help you at the pump if it can't get back to the jets, so you measure it at the jets, where you need it.***

The oil pump pressure relief valve keeps you out of trouble back at the pump and lines.

Half-Mast

PRESSURE INCREASE



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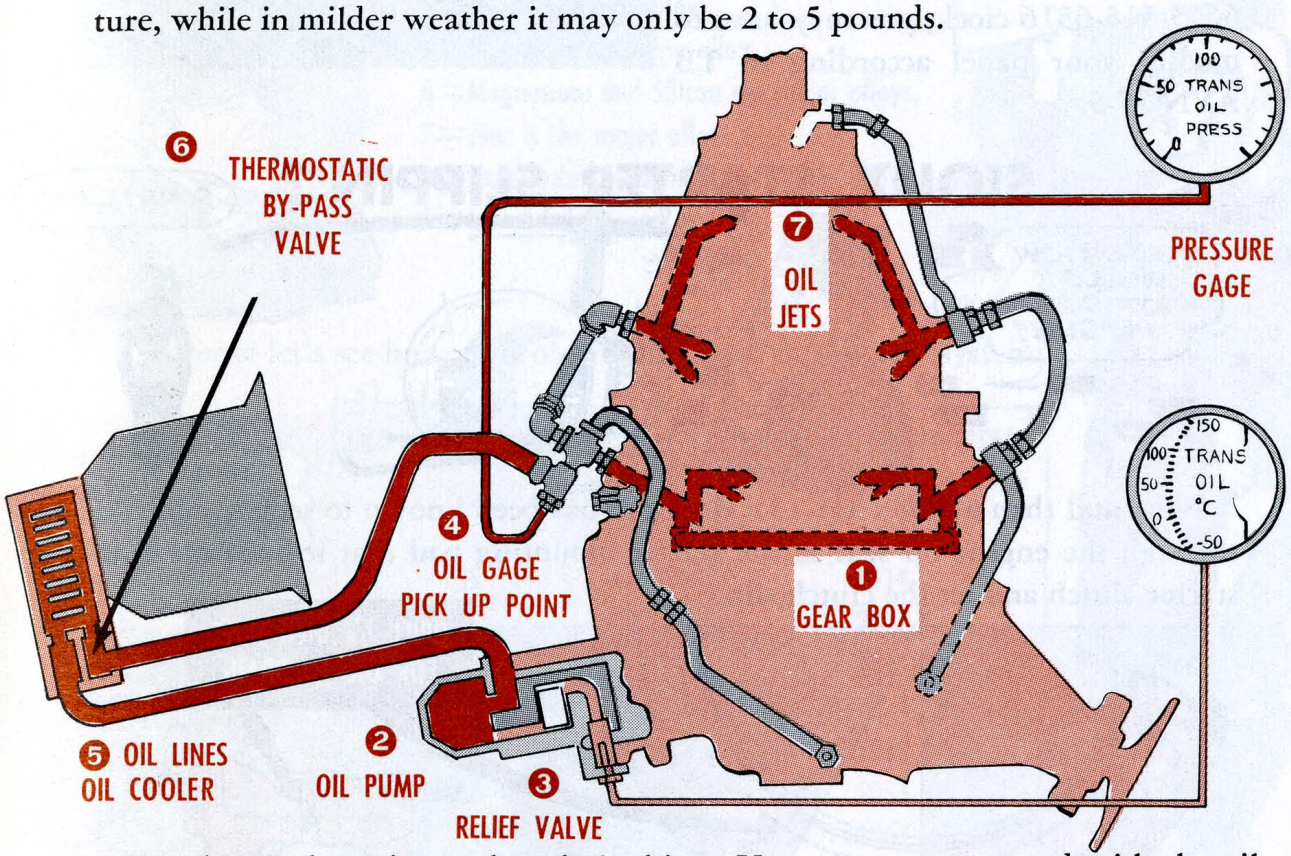

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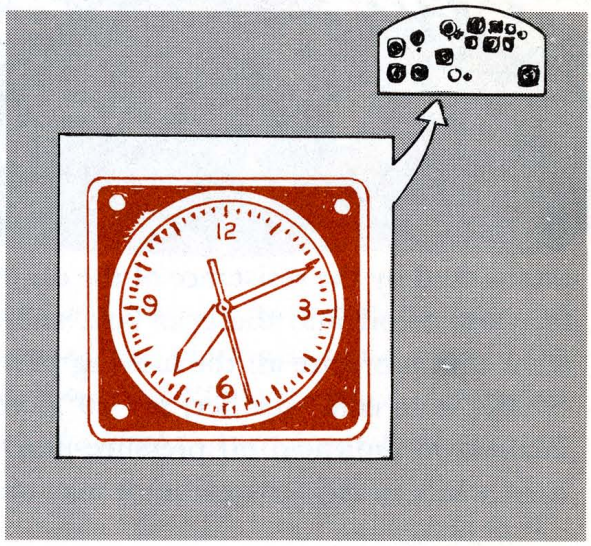
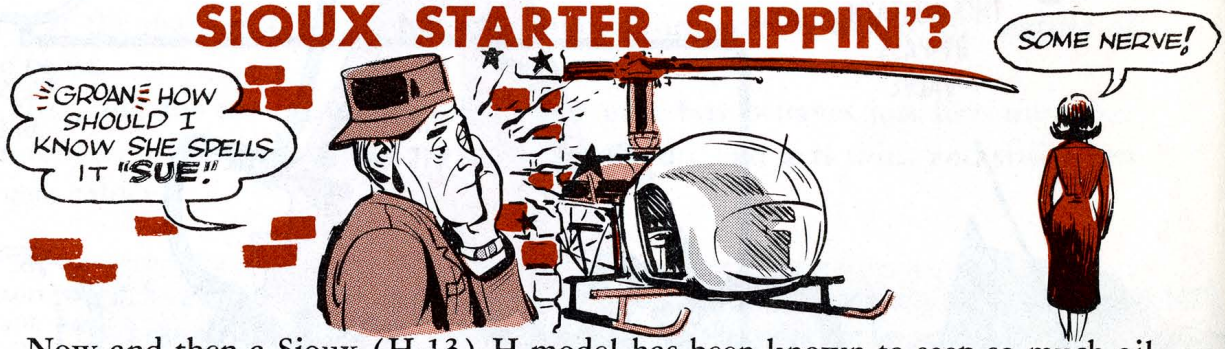
ODD CLOCK?



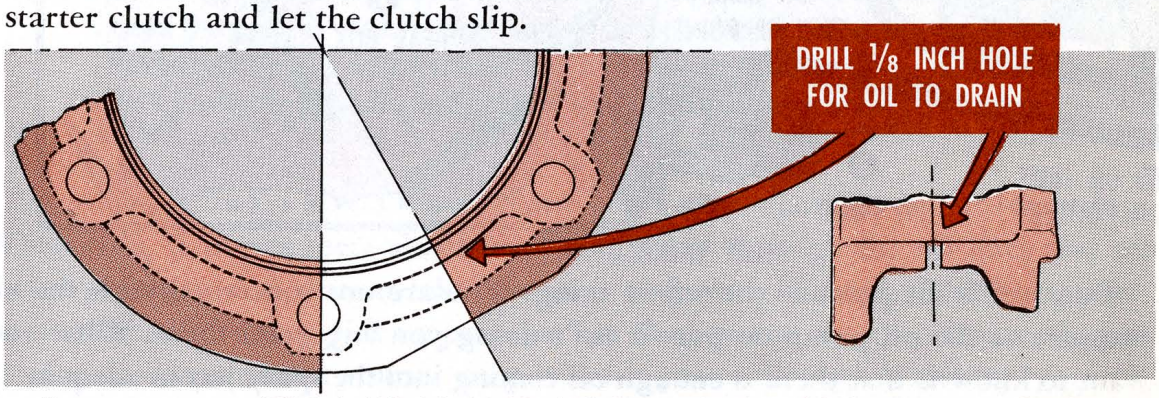
Don't be surprised if you requisition clock, FSN 6645-515-6516, for your aircraft and get back some entirely different timepiece. According to SL 7-59 (19 Jan 59), there're about 24 acceptable clocks in the system, and they're issuing 'em until used up. Screen your on-hand stocks for substitutions before requisitioning.

But they all fit your ship and give satisfactory results. If you do get the 6645-515-6516 clock, you may have to modify your panel according to TB AVN 25-5.

SIOUX STARTER SLIPPIN'?



Now and then a Sioux (H-13) H model has been known to seep so much oil through the engine oil seal at the starter mounting pad that it built up in the starter clutch and let the clutch slip.



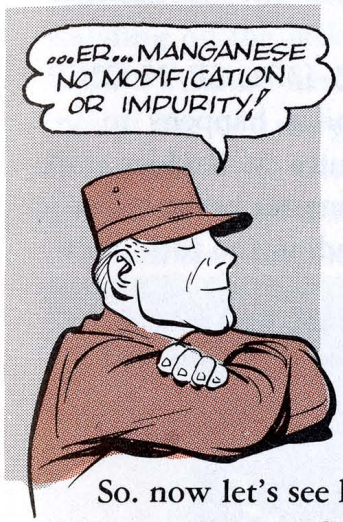
So now comes TM 1-1H-13-1012 (19 Nov. '59) which lets your field maintenance support drill a ⅛-in hole in the engine adapter pad so that any such oil can drain out. The hole goes through the adapter pad 30° to the right of centerline.

Naturally, you keep an eye on this drain, and if you see any great amount of oil leaking out, you have the seal replaced.

NEW NAMES

You've probably heard that all aluminum alloys have been given new numbers under a system somewhat like the SAE system for steels. Now one look at the number will tell you what the alloying elements are.

Like this: The first number of the four digit number will give you the alloying element.



1=Pure Aluminum (99.00% or better).
2=Copper is major alloy.
3=Manganese is major alloy.
4=Silicon is major alloy.
5=Magnesium is major alloy.
6=Magnesium and Silicon are major alloys.
7=Zinc is the major alloy.
8=Some other element is the major alloy.
9=Is not being used.

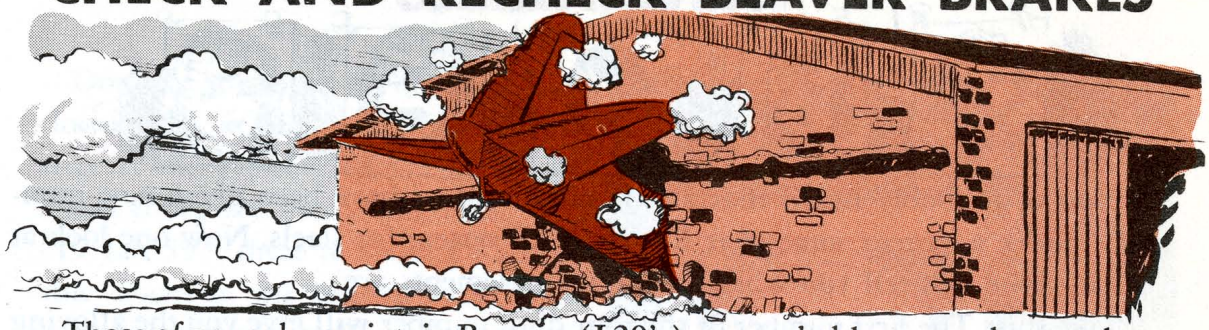
So. now let's see how your old friends look in the new system:

OLD ALLOY NUMBER	NEW ALLOY NUMBER
2S	1100
3S	3003
14S	2014
17S	2017
A17S	2117
24S	2024
52S	5052
56S	5056
61S	6061
62S	6062
75S	7075

And so it goes. The second digit tells about modifications of the alloy, or impurity limits and the last two identify the alloy or aluminum purity.

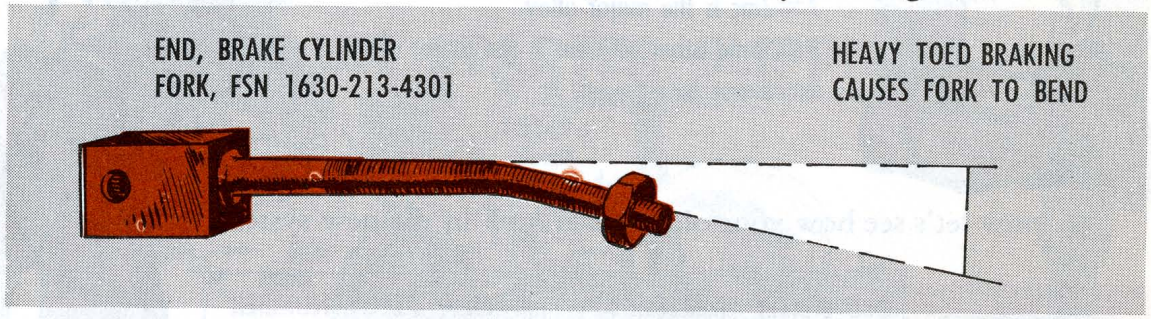
So, if you run across new publications using the new numbers, or if you receive sheet metal printed with the new numbers, don't flip, it's just your old pal with a new moniker.

CHECK AND RECHECK BEAVER BRAKES



Those of you who maintain Beavers (L20's) are probably aware that you have to watch your brake piston forks like a hawk, particularly if they are adjusted quite a way out of the locknut.

These parts, "End, Brake Cylinder Fork, FSN 1630-213-4301, (P/N C2CF-1213)", have an unhandy habit of bending if your pilot happens to get the least bit heavy-toed, like as if he was running out of runway. Rudder stops limit rudder pedal travel and the foreward cross-tube limits master brake cylinder movement—so the leftover excess force spends itself by bending the fork ends.



They're working on a stronger fork in a redesigned brake system, but until it gets here you'll do well to take a quick look at yours not only at every preflight, but every time your ship comes back to the line, as explained in TM 1-1L-20A-1015.

But remember that too much torque on the adjusting nuts down on the wheel units can bind the self-adjusting pins—which will call for heavy footwork by your pilot. So please to run back over paragraph 3-38, Page 102 in TM1-1L-20A-2, paying particular attention to item i which says you torque the adjusting nut to 20 foot-pounds. No more, no less.

Also, of course, the farther out of your master cylinder the fork end is adjusted, the more strain there is on it. You'll sorta have to sell your pilot on the idea that adjusting the brake pedals "to suit the pilot" as the manual says (para 3-12, page 100) can be carried too far, and just might leave him with braking problems at the wrong end of a short strip if he insists on having the pedals all the way back.

But don't let's be improvising any home-brewed reinforcements, like slipping a length of steel tubing over the fork. Such are not authorized, and you'll get your tail chewed. Just replace forks, and if you can't get 'em from supply, EDP the aircraft.

SUBSTITUTE STRUT

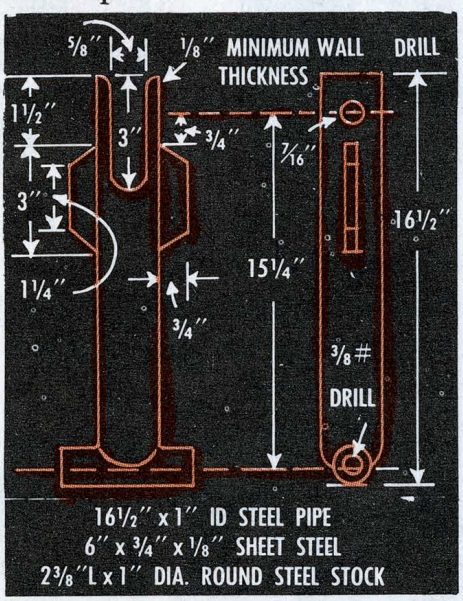
Dear Editor,

We get our hydraulic equipment overhauled on a local-purchase basis by a nearby civilian facility. Which is fine, but when we send in one of our Beaver (L-20A) tailwheel struts, it sometimes takes a few days to get it back.

Naturally, we didn't want the ship standing on the jack for this length of time. Not only would it tie up our jack, but it's a safety hazard to have a ship in the hangar that can't be moved in case of fire or emergency.

But when we tried taking the jack out and letting the ship down on its tailwheel, we found that the unprotected nut end of the tailwheel swivel bolt struck the bulkhead doubler.

So, we came up with a substitute strut.

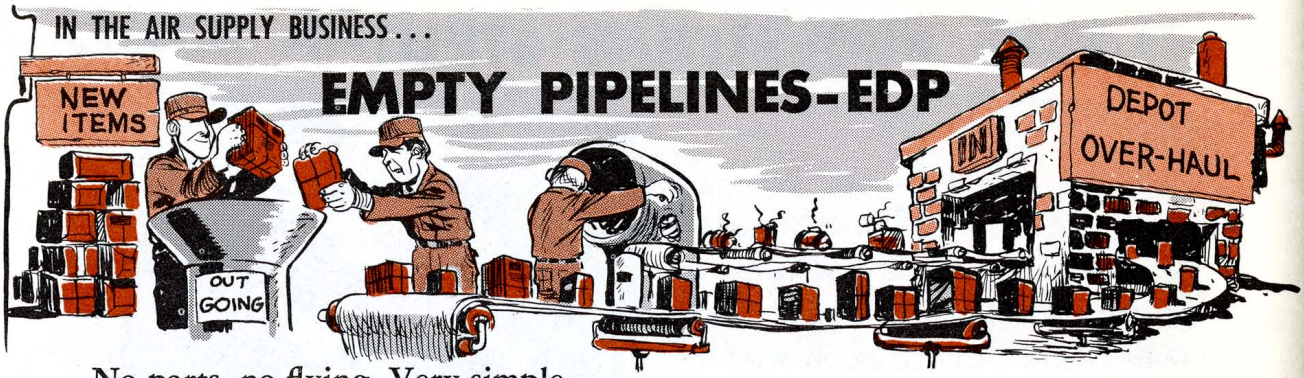


WITH SUBSTITUTE STRUT SHIP CAN BE WHEELED WITH CONVENIENCE

We painted this pipe a bright red so nobody would try to fly the aircraft with it in place. We install it when we remove a tail strut for maintenance. Then we can take the ship off the jacks and wheel it around at our convenience. As a further precaution against accidental flying, we leave the tailcone off unless we find it necessary to store the ship outdoor on the tie down line.

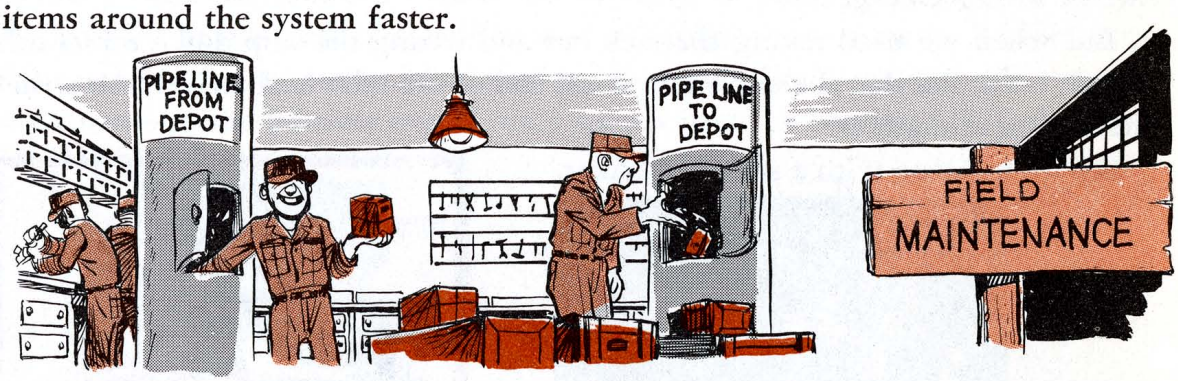
But with the tail cone on, we attach a red streamer to the substitute strut and tag the tail cone as a warning. Then we **red X** this condition on the ship's DD Form 781-2. It's well worth the nuisance.

Eugene L. Vertrees
Fort Knox, Ky.

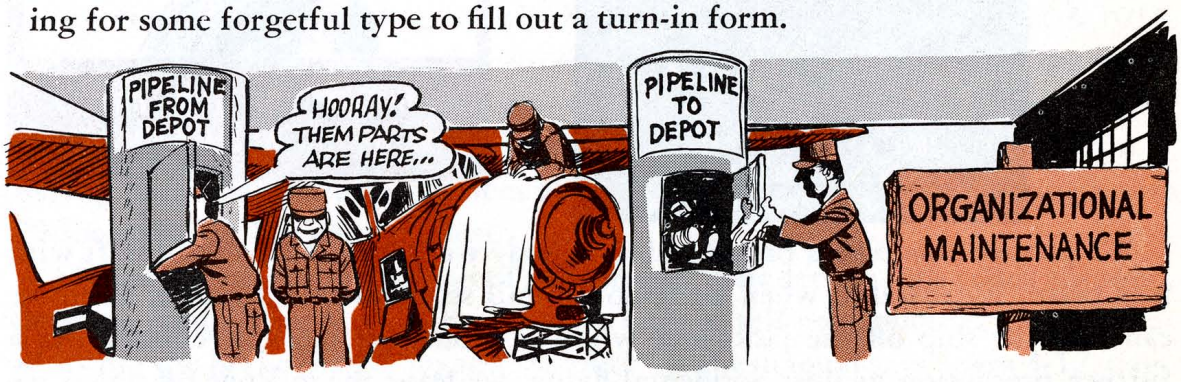


No parts, no flying. Very simple.

Why no parts? That's not hard to figure, either. Uncle would go bankrupt trying to buy all the reserve aircraft components that the average pilot and ground crewman thinks should be in the replacement channels. So, the only reasonable way to keep that supply pipeline flowing with parts is to move reparable type items around the system faster.



The overhaul people try to make quick repair turnarounds on these items. But, on the other hand, you can't expect a depot to overhaul a gear box or rotor head, for example, that's still sitting in an organizational hangar fiddelyump miles away. Too many of these unserviceable items are gathering dust just waiting for some forgetful type to fill out a turn-in form.



With only a limited number of spare aircraft components available, that pipeline runs dry pretty fast when somebody forgets to prime the pump at either end. Every time somebody breaks the suction, this pipeline loses its EDP-inhibitor qualities and collapses.

Have you been turning in those unserviceable but reparable type items as soon as possible? They may be your future component replacements.

A selected list of recent publications of interest to Organizational Maintenance personnel.

TECHNICAL MANUALS

TM 1-1H-13D-4-20P Oct.
TM 1-1H-13-203 Nov Add abrasior shoes skid landing gear.
TM 1-1H-13H-515 Nov Instal tail rotor drive shaft spt bracket assy.
TM 1-1H-19 Nov Tail cone.
TM 1-1H-19-579 Nov modif trail rotor drive shaft spt bracket.
TM 1-1H-19-582 Nov Instal vent line, carb idle valve attitude compensator.
TM 1-1H-19D-1004 Nov Modif power plant induct septem mix sect duct doors.
TM 1-1H-19-1007 Nov Eliminate fire hazard in low level fuel warning light instal.
TM 1-1L-20A-4 Sep III parts breakdown L20.
TM 1-1H-21-4-20P Oct.
TM 1-1H-21B-1CD Nov Safety of flt supplement.
TM 1-1H-23A-4-20P Oct.
TM 1-1H-34A-4-20P Oct.
TM 1-1H-37A-4-20P Oct.
TM 1-1H-37A-1005 Nov.
TM 1-1U-1A-1026 Nov Elevator Torque tube corrosion prev.
TM 3-4240-202-15,—15P M17 Protective mask.
TM 3-1040-206-10 Nov M7A1-6 Flame-thrower, mechanized.
TM 3-4240-208-20P Nov M9 gas-part filter unit.
TM 3-4240-209-12 Nov M10 gas-part filter unit.
TM 3-4240-209-20P Nov M10 gas-part filter unit.
TM 3-4240-210-12 Oct, 20P Nov M11 gas-part filter unit.
TM 3-4240-211-20P Nov M12 gas-part filter unit.
TM 5-2805-206-14 Nov Mil std engines 1½, 3-hp.
TM 5-3810-218-12P Oct Craneshovel, trk-mtd 3-ton quickway mod N-383AB.
TM 5-3895-206-12P Nov Bitumen heater.
TM 5-4120-206-12P Oct Air conditioner, trk-mtd, gasoline driver Typhoon Mod PAG-300.
TM 5-4210-202-10 Nov Fire truck 1500-GPM.
TM 5-4210-203-20P Nov Pumper 500-GPM, Hesse Carriage Mod HC-26.
TM 5-4310-205-20P Oct Air comp, reciprocating, 80-CFM, Clark Mod HO-6-5C1.
TM 5-4310-214-20P Oct Compressor rotery-recip, 15-CFM 3500-PSI, Air Trans-portable DAVEY Mod RPC-15.
TM 5-4310-218-20P Nov Compressor recip, 15-CFM, 35-PSI Joy mod 15HGP9-MS-1.
TM 5-4320-201-20P Nov Pump, Centrif 60-ft hd 240-GPM Carver Mod K300G.
TM 5-4320-202-12, -12P Oct Centrif pump, Carver Mod K203.
TM 5-4320-205-12P Nov Pump, centrif 25 ft-hd 115-GPM Carver Mod KN2LC.
TM 5-4320-206-12P Nov Pump recip, 100-GPM Carver Mod 40B.
TM 5-4940-205-15P Nov Shop equip, Lt trk mtd Set No. 2 Couse Mod MEDL.
TM 5-6115-213-10 Oct Generator 45-KW AC, 120/208, 240/416-V, 3-ph, 60cy, Kurz & Root Model Alex I.
TM 5-6115-216-20P Nov Generator 5-KW Hol-Gar Mod CE-52M-AC.
TM 5-6115-250-12P Nov Generator 5-KW Hollingsworth Mods CE-50-AC, CE-50-AC/WK2.
TM 9-214 Nov Insp, care, maint of Bearings.
TM 9-1005-223-12 Oct M14 rifle, 7.62-mm.
TM 9-1410-250-12P/1 Nov Nike-Hercules.
TM 9-1430-250-10P/2, 10P/3, 20P/1 Nov Nike-Hercules.
TM 9-1440-250-20P/1, 20P/2, 20P/3 Nov Nike-Hercules.
TM 9-1450-250-20P/3, 20P/4 Nov Nike-Hercules.
TM 9-2350-210-20P Nov Gun 155-mm SP M 53, Howitzer 8-in M55.
TM 9-4935-253-10P, -20P/3 Nov Test Set Nike-Hercules.
TM 9-5079-12 Oct Corp II Inter-com unit NV-23.
TM 10-500-23 Nov Aerial delivery, rigging Teletype AN/GRC-46.
TM 11-3895-206-10P Nov Feeling mach, cable RL-200/G and Reel Unit RL-26E.
TM 11-5805-227-10P, 20P Nov Transmitter, order wire T-389/TRC-29, T-389A/TRC-29.
TM 11-5805-250-20 Oct Terminal Telegraph AN/TCC-4, AN/TCC-20.
TM 11-5805-266-12P Nov Repeater gp, Telephone AN/FCA-1.
TM 11-5805-278-12P Oct Power supply PP-1165/FC.
TM 11-5815-205-15 Nov Teletype Central off AN/MGC-17.
TM 11-5815-244-12P Nov Teletype AN/FGC-25X.
TM 11-5815-246-10P, -20P Oct, Nov Facsimile set AN/TXC-1A, 1B, 1C, 1D.
TM 11-5820-218-20P Oct Restorer gp, Pulse form AN/TRA-10.
TM 11-5820-239-20P Nov Radio freq trans line assy CG-1013/U.
TM 11-5820-244-10P, -20P Nov Transmitter T-303/G. T-3-3A/G.
TM 11-5820-295-10P Oct Radio AN/GRC-19.
TM 11-5820-299-12P Oct Transmitter T399/UR.
TM 11-5820-344-10P, 20P Oct Radio R-392/URR.
TM 11-5820-340-12P Nov Radio rec AN/ARW-26.
TM 11-5820-342-12P Oct Accessory Kit No. 2.
TM 11-5820-344-12P Oct Accessory Kit No. 1.
TM 11-5825-213-12P Nov Antenna AS-595/GR.
TM 11-5826-206-12P Nov Marker beacon rec set AN/ARN-12.
TM 11-5831-201-12 Nov Intercom set C-1611/AIC.
TM 11-5841-216-10 Nov Radar set AN/APN-22.
TM 11-5895-200-10P, 20P Oct Radio AN/URW-3, AN/URW-3A.
TM 11-5895-244-10 Nov TS-1209/MSQ.
TM 11-5915-200-20P Nov Hybrid circuit newwork TA-31/U.
TM 11-5920-207-12P Oct Geniometer drive MX-1170/GRD.
TM 11-5965-239-12P Oct Headset HS-32.
TM 11-5985-222-10P Nov Antenna coupler CU-52/URR.
TM 11-6125-206-12P Nov Dynamotor DY-86/ARN-30.
TM 11-6625-233-10P Nov Test sets TS-26/TSM, TS-26A/TSM, TS-26B/TSM.
TM 11-6625-303-12P Nov Test set elec pwr AN UPM-93, AN UPM-100.
TM 11-6625-332-12P Oct Channel align indicator ID-292/PRC-6, ID-292A/PRC-6.
TM 11-6720-205-10, -20P Oct Camera KE-7(1).
TM 11-7490-202-10P, 20P Nov Sound Set AN/FNq-3, AN/FNq-3A.
TM 55-2210-209-10 Oct Diesel Elec Locomotive 0-4-4-0.
TM 55-6605-202-12P Oct Gyro Compass Mark 22 Model 0.

TECHNICAL BULLETINS

TB AUN 23-5-10 Oct UER Digest.
TB AUN 23-5-11 Nov UER Digest.
TB 9-268 Nov Cleaning materials in Lieu of Carbon Tet for elect items.
TB 9-288 Nov AV-1799, AO-895 engines repair of Aluminum oil coolers.
TB 9-291 Nov Tanks: Track sprocket wear.
TB 9-1005-266-12 Nov match weapons: Care, cleaning.
TB 9-1330-200/1 Nov Grenade Rifle M31.
TB 9-1430-250-20/2/3 Dec Nike-Hercules: Improve magnetron operation.
TB 9-1430-251-20/4 Nov Nike- Hercules: Cable harness in pedestal-blower-motor compartment.

LUBRICATION ORDERS

LO 3-1040-204-20 Oct M7 portable flame thrower.
LO 5-1043-1-2 Oct Grader, Rome Mod 402.
LO 5-3810-207-20-2 Aug 20-ton crane-shovel Quickway Mod M200.
LO 5-4210-202-20-1, -20-2, -20-3 Nov Fire truck 1500-GPM, walter motor trk Mod MF.
LO 5-4310-219-20 Oct Rotary air compressor 600-CFM, Ingersall-Rand Mod DR-600.

MODIFICATIONS

MWO Ord Y71-W1 Dec Tracking station semi-trailer M323: Replace fire extinguishers (Corporal II).
MWO Ord Y75-W38 Nov Nike-Hercules, Add to modif nameplate to special site elevator-Mtd-Lcher Contrd indicator.
MWO Ord Y86-W10 Dec Nike-Hercules: Rail XM3.
MWO Ord Y90-W4 Nov (Urgen) Nike-Hercules: relocate resistor R4 in regulated rectifier to prevent burning of terminal board.
MWO 9-1010-200-20/2 Nov 40-MM Twin auto cannon M2 series to prevent misfires from defective firing pins.
MWO 9-1015-203-20/1 Nov (Urgent) 105-MM Howitzer M2A2: Remove top left shields Assy to prevent damage to Telescope Mount.
MWO 9-2350-203-20/3 Nov 155-MM SP Howitzer M44, M44A1: Modif powder case hold-open latch.

PARTS MANUALS

Ord 7 SNL J-738 Sects 34, 36, 37 Nov.
Ord 7 SNL Y-4 Sect 6 Gp Y Nov.
Ord 7 SNL Y4-4 Gp Y Nov Radar test set TS-847A/MSW-1, Nike.
Ord 7 SNL Y7 Nov.

FORMS

DA Form 9-115 Oct Nike-Hercules record book.
DA Form 9-116 Oct LaCrosse record book.
DA Form 9-117 Oct LaCrosse record book.

THE SCOUT

CONTRIBUTIONS

TRAIN WITH THIS

Dear Editor,

It's really a tough nut to crack for a training outfit to get carbide lamps for darkening rifle sights.

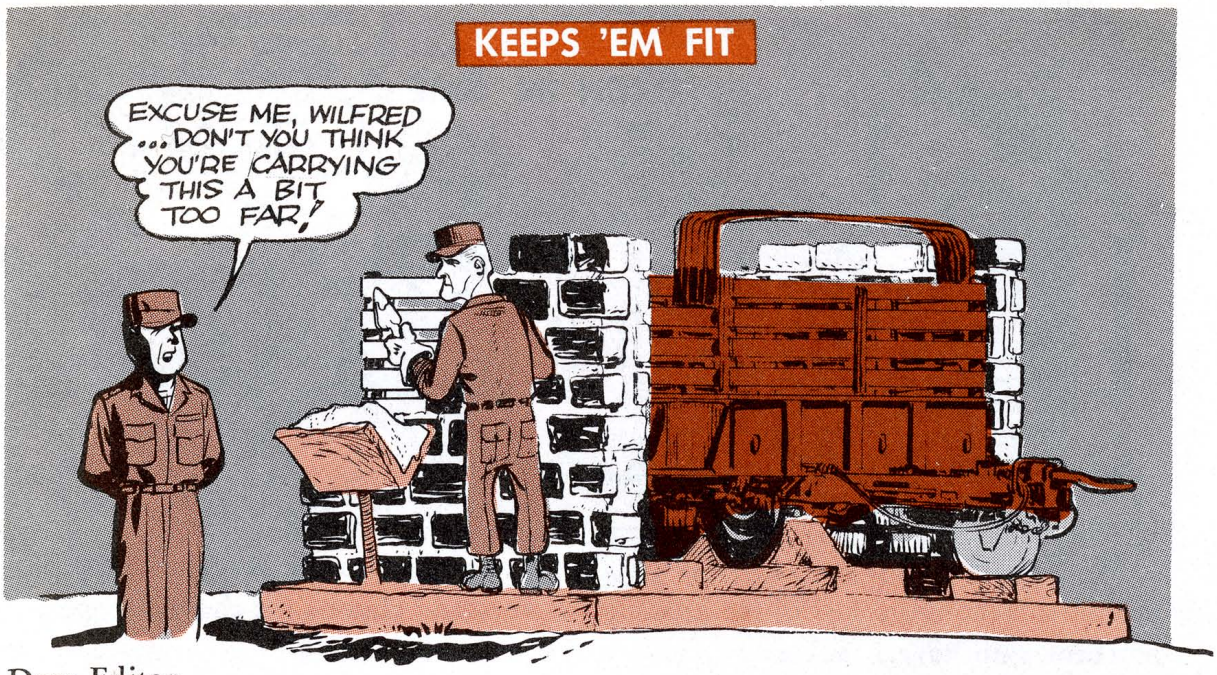
They're not authorized for issue, and the only way units can get them is for someone (generally the C.O.) to buy them with his own cash. They don't last long, either, because of the hard use they get.

But we've whipped that problem here.

We get bottles of toy locomotive paint (liquid flat black) from the hobby store and put it on the sights with artist's brushes. It's cheap and does the job better than the carbon from carbide lamps. What's more, if anybody wants it off, just whisk it away with cleaning solvent.

Fred H. Clark, OCMT
Fort Carson, Colorado

(Ed Note—That's great. A lot of men will welcome this improvement over the carbide lamps.)



Dear Editor,

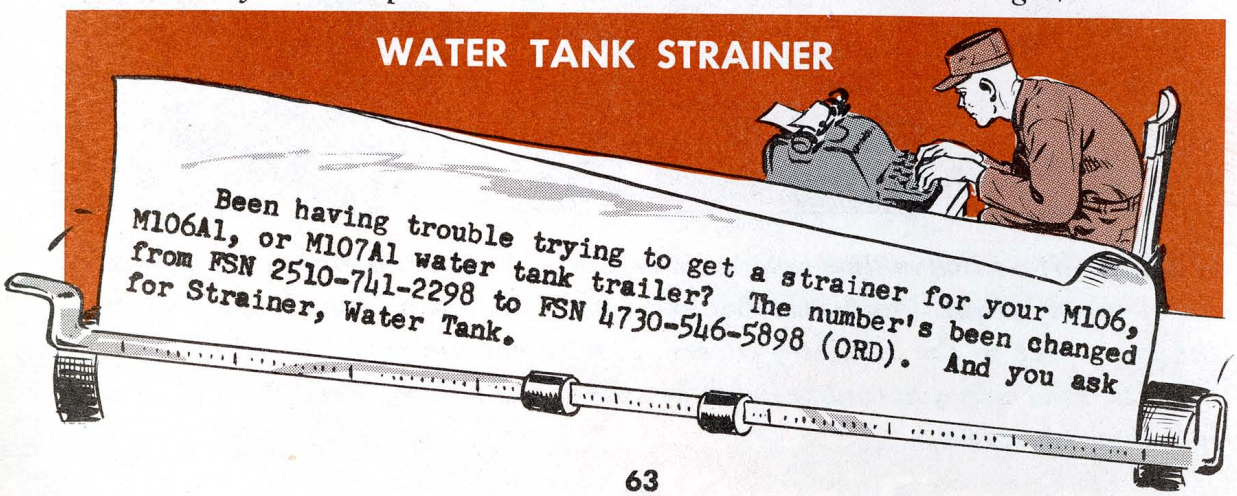
I note quite frequently during technical inspections that the brakes on 1½-ton, 2-wheel trailers are frozen, due to corrosion and rust from lack of use. Many of these trailers assigned to units stand for months with hand brakes tightly applied.

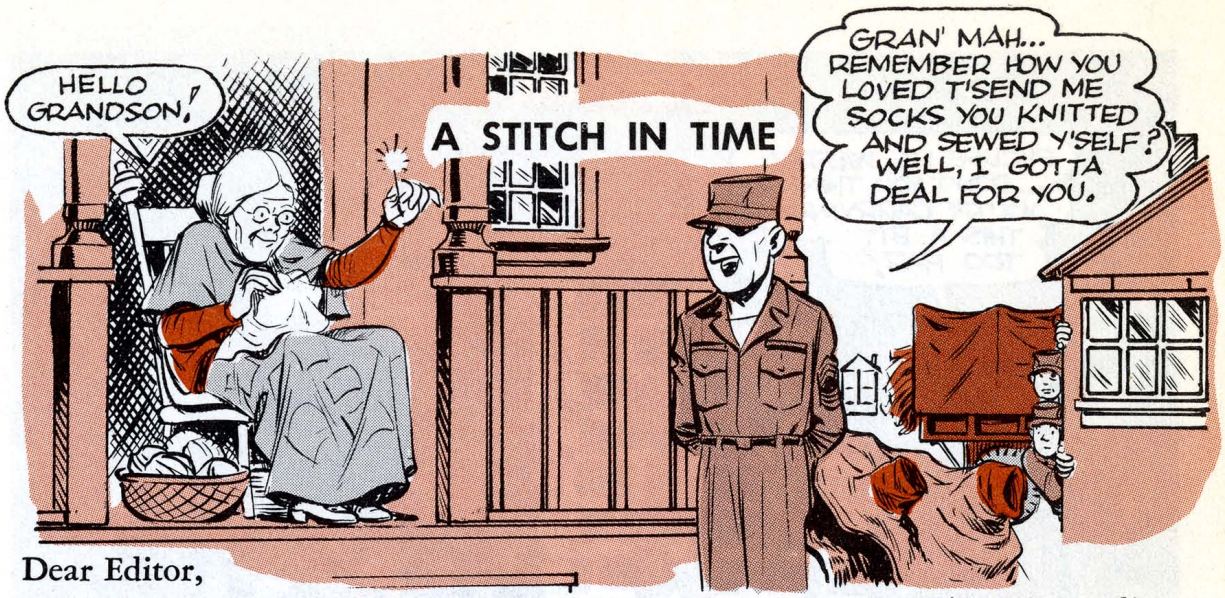
I suggest that trailers standing for long periods of time should be blocked clear of the ground with hand brakes released, and exercised about every 30 days by applying hand brake on and off several times.

If connected to a vehicle, air can be applied in order to exercise the master cylinder and other service brake components. This is also a good time to check lights.

Wallace R. Englehart
Fort Dix, N. J.

(Ed Note—Any outfit living in garrison would be wise to follow your suggestion on the G754-series trailers. Like they say, an ounce of PM is worth bushels of new brake components. It'd also be a good idea to remind your buddies that SB 9-4 tells you to keep hand brakes released on vehicles in storage.)



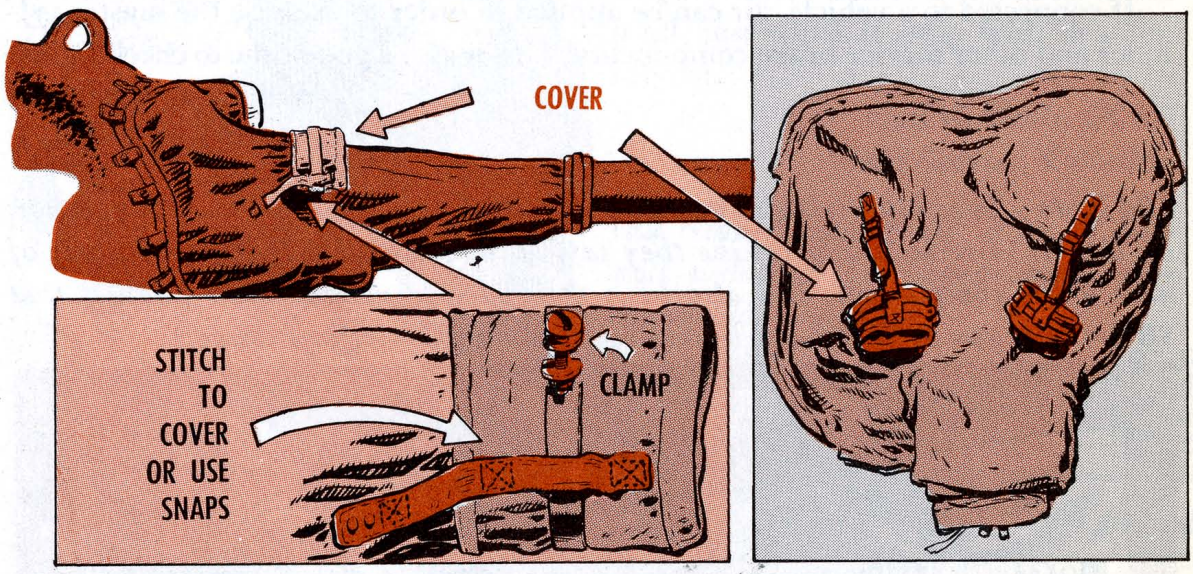


Dear Editor,

We have come up with a fix on the gun shield cover for the M48-series medium tanks—to keep from losing the auxiliary covers and clamps for the telescope and machine gun barrel jacket.

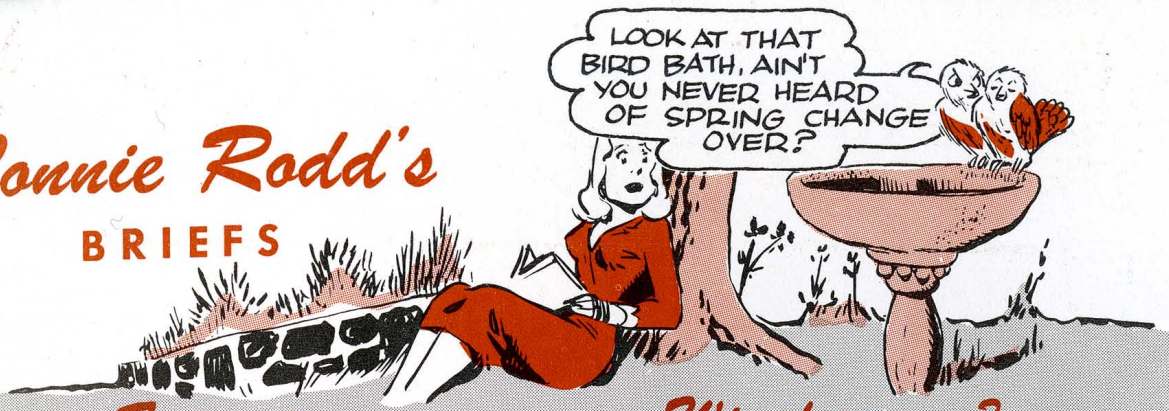
We sewed two web straps about 15 to 18 inches long from the main gun cover to the auxiliary covers, with a loop at one end to hold the clamps. Saves money in the long run by stopping the loss of two covers. What do you think?

SFC J. J. Selig
Field Maint Shop
Mississippi National Guard



(Ed Note—If a stitch in time saves a cover, Sarge, your outfit may be saving itself a lot of supply requisition headaches and funds. Instead of sewing the strap from the gun cover to the auxiliary covers . . . why not use rivets at either end with buckles. That way you could always be sure of unbuckling them with no sweat if it became necessary.)

Connie Rodd's BRIEFS



Fuse news

Your old Ord 7 SNL Y6-1 didn't list the fuses that go in the fuse panel for the telephone switchboard in your Nike-Ajax launching control trailer. But they do show up in ORD 7 SNL Y6 Section 1 (16 Apr 59). Look up FUSE, CARTRIDGE: h speed instantaneous, glass body, one time, ferrule term., ¼ dia, 1 lg, 250 v, 1 amp (Eng), FSN 5920-050-0598.

The right place

You guys who handle special weapons materiel, remember: When you run into defective atomic stuff, fire off five copies of DA Form 468 to the Commanding General, Ordnance Ammunition Command, Joliet, Illinois, ATTN: ORDLY-QM. Don't use any other address. The scoop on sending in the UER's is in TM 39-5-8 (— — —) and AR 700-38 (4 Aug 59).

Cold converters

When you've gotta go at zero to 65° below, you've got problems aplenty. So don't go knocking out the seals in your vehicle torque converters by using grade C diesel fuel oil. That info was put in Table II, Change 1 (31 Oct 55) to TM 9-2855, for World War II vehicles only. Newer torque converters get OES, like the LO's say.

Wired wrong?

Got a wheeled vehicle that's had the ammeter replaced by a battery-generator indicator? MWO Ord GI-78 (23 Mar 56), now rescinded, described this changeover. If you've got the indicator, it should operate only when the ignition is ON. So if it gives a reading when the switch is OFF, ask your Ordnance support to check the hookup.

Check that load

Before you go hitching onto any heavy load with that M62 or M246 wrecker, better lay a sharp eye on its Safe Load Limit data plate. The vehicle models shown in Figs 51 and 60 in TM 9-8028 (13 Jun 55) are reversed. Fig 51 is for the M246 and Fig 60 is for M62. You can check it by the boom extension data in paras 53a(1) and 54a(1) in the TM.

Watch the exceptions

You'll find plenty of exceptions listed in AR 701-5110 (14 Apr 59) and AR 701-5120 (14 Apr 59) when you're looking up the tech service responsible for supplying your common hand tools. Most were transferred to Quartermaster from Ordnance. But you can still find about 250 items in the FSN **5110** group and class and around 5,000 items in the FSN **5120** group and class belonging to the other tech services.

Would You Stake Your Life on the Condition of Your Equipment?

- **Pinpoint bad parts**
- **Check out your equipment with the 2nd echelon test sets**